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CATALOGUE

OF THE

AGRICULTURAL COLLEGE,

STATE OF KANSAS.

1869.

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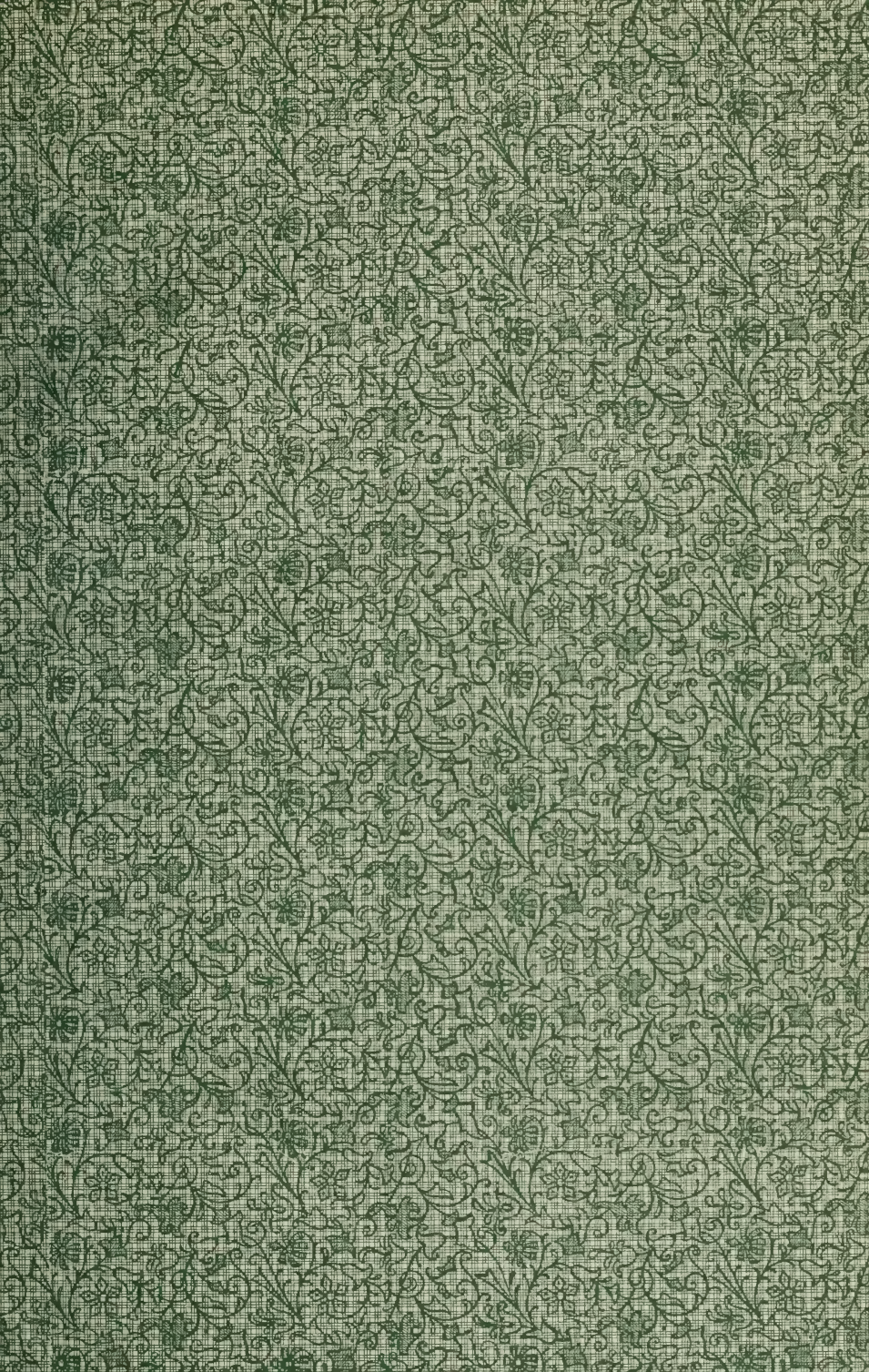
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CATALOGUE

OF THE

OFFICERS AND STUDENTS

OF THE

KANSAS STATE AGRICULTURAL COLLEGE,

FOR THE YEAR 1869.

MANHATTAN, KANSAS:
PRINTED AT THE STANDARD OFFICE.
1870.

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J. EVARTS PLATT,
Professor of Mathematics and Vocal Music, and Principal of the
Preparatory Department.

MISS MARY F. HOVEY, •
Professor of the German Language and Literature.

MRS. HATTIE V. WERDEN,
Teacher of Instrumental Music.

STUDENTS.

CLASSICAL COURSE.

JUNIOR CLASS.

NAMES.	RESIDENCE.
Denison, Ellen F.,	<i>Blue Mont.</i>
Huntress, Charles O.,	<i>Clay Center.</i>
Williston, S. Wendell,	<i>Manhattan.</i>

SOPHOMORE CLASS.

Campbell, Emily C.,	<i>Blue Mont.</i>
Davis, Eliza Z.,	<i>Manhattan.</i>
Denison, Emma J.,	<i>Blue Mont.</i>
Haines, Anna M.,	<i>Zeandale.</i>
Haines, Theophania M.,	"
Houston, M. Luella,	<i>Blue Mont.</i>
White, Kate,	"
Houston, S. Dexter,	"
Smith, William R.	<i>Atchison.</i>
Todd, Albert,	<i>Blue Mont.</i>
White, Wm. Fardl,	"
White, A. Judson,	"

FRESHMAN CLASS.

Campbell, Ellen L.,	<i>Blue Mont.</i>
Campbell, Alice M.,	"
Himes, Anna P.,	"
Mudge, Eusebia B.,	"
Perkins, Lillian F.,	<i>Manhattan.</i>
Kimble, Samuel,	<i>Blue Mont.</i>
Johnson, J. Frank,	<i>Wabounee.</i>
Little, George, B.,	<i>Manhattan.</i>
Miller, H. Frank,	<i>Colorado.</i>
Mudge, Milton R.,	<i>Blue Mont.</i>
Sanford, Albert H.,	<i>Zeandale.</i>
Soupene, John C.,	<i>Pleasant View.</i>
Shannon, James P.,	<i>Big Blue.</i>
Tolin, Leonard B.	<i>Circleville.</i>

COLLEGIATE AND SCIENTIFIC.

Barrett, Wm. D.,	<i>Hawcath.</i>
Brous, Harry A.,	<i>Pottawatomie County.</i>
Hipple, Oliver P.,	<i>Monrovia.</i>
Stinson, Thomas J.,	<i>Tecumseh.</i>
Sternberg, Charles H.,	<i>Ft. Harker.</i>

SCIENTIFIC AND PREPARATORY.

Names.	Residences.
Anthony, George H.,	<i>Leavenworth.</i>
Arnold, Charles R.,	<i>Manhattan.</i>
Allen, Charles W.,	<i>Ellsworth.</i>
Baker, Jacob H.,	<i>Oscarkee.</i>
Baker, Nestor R.,	<i>Topoka.</i>
Benton, Carmie Othello,	<i>Louisville.</i>
Benton, James O.,	"
Benton, Lewis O.,	"
Bertram, George W.,	"
Burnison, Wm. H.,	"
Beal, Wm. H.,	<i>Ashland.</i>
Blain, James E.,	<i>Vienna.</i>
Blain, George E.,	"
Burroughs, Charles Frank,	<i>Blue Mont.</i>
Chaffee, Louis W.,	<i>Blue Bottom.</i>
Campbell, Lewis E.,	<i>Blue Mont.</i>
Colburn, Edward F.,	<i>Hays.</i>
Campbell, Arthur M.,	<i>Blue Mont.</i>
Clark, Wm. A.,	<i>Washington.</i>
Dale, Thomas,	<i>Blue Bottom.</i>
Davis, Wm. B.,	<i>Manhattan.</i>
Davis, John E.,	"
Denison, George,	<i>Blue Mont.</i>
Denning, Wm. H.,	"
Davidson, Willie,	"
Davidson, George K.,	"
Gale, George A.,	<i>Manhattan.</i>
Galbraith, George M.,	<i>Illinois.</i>

Giles, Francis Edgar,	<i>America City.</i>
Green, Thomas H.,	<i>Blue Bottom.</i>
Hannum, George W.,	<i>America City.</i>
Hibbard, Russel A.,	<i>Manhattan.</i>
Himes, Daniel Frank,	<i>Blue Mont.</i>
Harding, Robert,	<i>Ashland.</i>
Hipple, Samuel L.,	<i>Monrovia.</i>
Higinbotham, John, Jr.,	<i>Leavenworth.</i>
Higinbotham, Lewis F.,	<i>Manhattan.</i>
Hays, Charles L.,	<i>Olathe, Johnson Co.</i>
Hougham, Henry,	<i>Blue Mont.</i>
Hougham, Wilson T.,	<i>Indiana.</i>
Houston, Charles S.,	<i>Blue Mont.</i>
Hoyt, Frank,	<i>Manhattan.</i>
Hoyt, Charles E.,	"
Hostuttler, James P.,	<i>Vermillion.</i>
Humphrey, Chester K.,	<i>Milford.</i>
Humphrey, Howard R.,	"
Huffsmith, Samuel R.,	<i>Salina.</i>
Huggins, Lee E.,	<i>Manhattan.</i>
Jackson, Frank E.,	"
Kimball, Charles W.,	<i>Blue Mont.</i>
Kuhn, Preston H.,	<i>Leavenworth.</i>
Knipe, William,	<i>Blue Mont.</i>
Lamb, Charles W.,	<i>Detroit.</i>
Moody, Frank S.,	<i>Manhattan.</i>
McKee, Wm. F.,	<i>Illinois.</i>
Lee, Francis Corydon,	<i>Ipsing, Michigan.</i>
Points, Charles N.,	<i>Vermillion.</i>
Philbrick, Charles P.,	<i>Leavenworth.</i>
Powers, Pomeroy W.,	<i>Manhattan.</i>
Pierce, Edward M.,	<i>Blue Mont.</i>
Pierce, Frank H.,	"
Pierce, Lorenzo D.,	<i>Pottawatomie.</i>
Pillsbury, George,	<i>Council Grove.</i>
Reynolds, James B.,	<i>Ft. Riley.</i>
Rockefeller, John P.,	<i>Washington.</i>
Stanciff, David R.,	<i>Blue Mont.</i>
Stewart, Arthur F.,	"
Stewart, George,	<i>Irving.</i>
Skianer, Porter N.,	<i>Lawrence.</i>
Stringfield, Joba W.,	<i>Falls City, Nebraska.</i>
Stringfield, Thomas J.,	" "
Sturgeon, Thomas P.,	<i>Ohio.</i>
Vincent, Wm. D.,	<i>Manhattan.</i>
Usher, Linton J.,	<i>Lawrence.</i>
Wharton, Francis H.,	<i>Doniphan.</i>

Winne, Ernest,
Williams, Thomas E.,
Whedon, Charles O.,

Blue Mont.
Ashland.
Manhattan.

LADIES.

Allen, Emma J.,
Benton, Lucia Ophelia,
Blain, Anna,
Burroughs, Lettie E.,
Campbell, Martha E.,
Campbell, Fannie L.,
Carnahan, Sarah A.,
Colburn, Jennie,
Childs, Ella S.,
Dennis, Ella N.,
Davidson, Lizzie Mc G.,
Dearborn, Carrie A.,
Dearborn, Leila D.,
Dimmock, Myra J.,
Emmerson, Bessie,
Foster, Mary A.,
Fryhoffer, Emma,
Gale, Ella M.,
Gove, Lucinda J.,
Greeley, Fanny A.,
Hoyt, Anna E.,
Harding, Leoma,
Hougham, Eliza,
Huggins, Cordelia C.,
Kimball, Carrie M.,
King, Martha E.,
King, Emma M.,
Knipe, Susanna J.,
Knipe, Mary E.,
Knipe, Laura B.,
Kuhn, Clara G.,
Kurtz, Eva J.,
Littlefield, Emma J.,
Miller, Isabella J.,
Morse, Mary Alice,
Morris, Cornelia A.,
Morris, Mary E.,
Parkinson, Hattie E.,
Parish, Eugenia F.,
Parish, Ida M.,
Parsons, Mildred E.,
Parsons, E. Gertrude,
Pierce, Emma M.,

St. George.
Louisville.
Vienna.
Blue Mont.
"
"
Cedar Creek.
Hays.
Rocky Ford.
Blue Mont.
"
Manhattan.
"
"
Ogden.
Manhattan.
Fancy Creek.
Manhattan.
"
New York.
Abilene.
Ashland.
Blue Mont.
Louisville.
Blue Mont.
Manhattan.
"
Blue Mont.
"
"
Leavenworth.
Manhattan.
"
"
"
Eureka.
"
Blue Mont.
"
"
Kansas City.
"
Blue Mont.

Parr, Mary E.,	<i>Wyandotte.</i>
Roberts, Alma, E.,	<i>Washington.</i>
Standcliff, Alvira E.,	<i>Irving.</i>
Smith, Gracie,	<i>Blue Mont.</i>
Stewart, Laura E.,	<i>Irving.</i>
Stewart, Alice E.,	<i>Blue Mont.</i>
Tempero, Louise J.,	<i>Deep Creek.</i>
Turner, Carrie A.,	<i>Manhattan.</i>
Taylor, Mattie,	<i>Junction City.</i>
Thomas, Emma M.,	<i>Topeka.</i>
Todd, S. Elizabeth,	<i>Frankfort, Marshall Co.</i>
Thurston, Emily L.,	<i>Manhattan.</i>
Thurston, Nettie F.,	"
Whitney, Ella J.,	<i>Blue Mont.</i>
Whitney, Hattie E.,	"
White, Fannie N.,	<i>Wyandotte.</i>
Walker, Margaret J.,	<i>Rock Creek.</i>
Woodward, Eva J.,	<i>Manhattan.</i>
Woodward, Julia M.,	<i>Ashland.</i>

SUMMARY.

Resident Graduates.....	1
Undergraduates.....	34
Scientific and Preparatory	138
Total.....	173

CALENDAR.

1869-1870.

1869. Jan'y 6 — Winter Term begins.
March 29 — Winter Examinations begin.
April 1 — Spring Term begins.
June 21 — Annual Examinations begin.
June 23 — Commencement Exercises.
Sept. 7 — Examination for Admission.
Sept. 8 — Fall Term begins.
Dec. 20 — Fall Examinations begin.
Dec. 22 — Fall Term ends.
1870. Jan'y 6 — Winter Term begins.
March 28 — Examinations begin.
March 31 — Spring Term begins.
June 20 — Annual Examinations begin.
June 22 — Commencement Exercises.
Sept. 8 — Fall Term begins.
Dec. 19 — Examinations begin.
Dec. 21 — Fall Term ends.
1871. Jan'y 4 — Winter Term begins.

COURSES OF STUDY.

CLASSICAL COURSE.

AGRICULTURAL AND SCIENTIFIC COURSE.

MILITARY SCIENCE AND TACTICS.

MECHANIC ARTS AND CIVIL ENGINEERING.

ACADEMIC AND PREPARATORY COURSE.

COMMERCIAL AND MERCANTILE COURSE.

AGRICULTURAL AND SCIENTIFIC COURSE.

FIRST YEAR.

FIRST TERM. — Soils in their Relations to Vegetation, Water, Atmosphere, and also in their Relation to Vegetable Products.
Recitations, Lectures and Field Practice on the Farm.
University Algebra and Modern History.

SECOND TERM. — Subsoil Plowing, Tillage, Draining and Fertilizers.
University Algebra.
Natural Philosophy, with Lectures.

THIRD TERM. — Botany, (Gray's.) Zoology, (Agassiz.)
Meteorology, (Loomis'.) Geometry, (Robinson's.)
Botanical Lectures, Excursions and Field Instruction.

SECOND YEAR.

FIRST TERM. — Structure and Physiology of Plants.
Buildings, Fall Crops and Use of Farm.
Machinery, and best Farm Implements.
Preservation of Seeds, Recitations, Lectures, and Field Instruction.
Geometry, (Robinson's.) Logic, (Coppee's.)

SECOND TERM. — Physiology and Care of Domestic Animals.
Diseases of Cattle and Horses.
Propagation and Cultivation of Forest Trees adapted to Hedges, and their Cultivation. Recitations, Lectures.
Trigonometry, (Robinson's.) Logic, (Coppee's.)

THIRD TERM — Horticulture, and Kitchen Gardening.
Propagation and Training of Fruit Trees, Vines, especially the Grape, Small Fruits, and Vegetables.
Grafting, Recitations and Lectures.
Surveying and Engineering.

THIRD YEAR.

FIRST TERM — The Staple Grains, Forage, Root and Fiber Crops of the Northern and Middle States, with their Varieties, and Soils adapted to them.
Insects Injurious to Vegetation.
Conic Sections, (Robinson's.)
Mental Philosophy, (Haven's.) Chemistry.

SECOND TERM.—Raising and Care of Domestic Animals.
 Characteristics and Adaptation of Breeds.
 Cattle for Beef, Draft and Dairy; Horses, Sheep, Swine;
 Pasturing, Soiling, and Stall Feeding.
 Agricultural Botany, Destruction of Weeds and Noxious
 Plants.
 Farm Book-Keeping.
 Chemistry, with Lectures.
 Physiology, (Hitchcock's.)
 "How Plants Grow," (Johnson.)

THIRD TERM.—History of Agriculture and Sketches of Husbandry in
 Foreign Lands.
 Adaptation of Farming to Soil, Climate, Market and
 other Natural and Economical Conditions.
 Systems of Farming, Stock, Sheep, Grain and Mixed
 Farming.
 Geology, (Dana's.) Moral Philosophy, (Haven's.)
 Political Economy, (A. Walker's.)

Agricultural, Zoological, Botanical and Geological Excursions during
 the Fall and Spring Terms of the Second and Third Year, will be con-
 ducted under the guidance of the Professor of Agriculture and the
 Professor of Natural Sciences, and are intended to be thoroughly prac-
 tical in their character.

Daily and weekly exercises in Music, Calisthenics, Composition and
 general Reading, the same each year as in the Classical Course.

MILITARY COURSE.*

FIRST YEAR—JUNIOR CLASS.

FIRST TERM. — Infantry Tactics, (Upton's.)
 School of the Soldier.
 School of the Company.

SECOND TERM.—Cavalry Tactics, (United States of 1841.)
 School of the Trooper.
 School of the Platoon.

THIRD TERM.—Artillery Tactics, (United States.)
 School of the Piece.
 Army Regulations.
 Articles of War.
 Lessons in the Small Sword and Broad Sword Exercise.

SECOND YEAR—SENIOR CLASS.

FIRST TERM. — Infantry Tactics.
 School of the Company continued.

SECOND TERM.—Cavalry Tactics.
 School of the Squadron.

* Any Student, after passing a proper examination by the Faculty,
 can enter this Department, and all male students are required to take the
 Military Drill.

THIRD TERM.— Artillery Tactics. School of the Battery.
 Army Regulations continued.
 Benet on Courts Martial. Chandler's Manual.
 System of Accountability for Public Property in the
 various Staff Departments, and in the Company.
 Company Books, Clothing, Orders, Letters, Returns.
 Cooking, Camping, Hygiene.
 Elements of Military Engineering (Mahan.)
 Small Sword and Broad Sword Exercises continued.
 Lippitt's Special Operations of War.

PREPARATORY COURSE.

Those who wish to enter the Academic, or Preparatory Department, should be prepared to pass a satisfactory examination in the four fundamental rules of Arithmetic, and the Elements of English Grammar, Geography, Spelling and Reading.

FIRST YEAR.

FIRST TERM.— Arithmetic, (Robinson's.)
 Geography.
 English Grammar, (Greene's.)
 First Book and Latin Grammar, (Harkness'.)

SECOND TERM.— Arithmetic.
 Geography.
 English Grammar.
 Harkness' Grammar and Reader.

THIRD TERM.— History of the United States, (Anderson's.)
 Arithmetic.
 English Grammar.
 Cæsar.

SECOND YEAR.

FIRST TERM.— Arithmetic, (Metric System.)*
 English Grammar—Analysis.
 Cicero's Orations.
 Whiton's 1st Greek Lessons and Hadley's Grammar.

SECOND TERM.— Physiology and Hygiene, (Cutter's,) and Lectures.
 Cicero's Orations.
 Whiton's 1st Lessons and Grammar.
 Book-Keeping.

THIRD TERM.— Physiology and Hygiene, with Lectures.
 Virgil's Æneid.
 Xenophon's Anabasis.
 Book-Keeping and Commercial Law.

Special attention paid to Reading, Spelling and Penmanship.

THIRD YEAR.

FIRST TERM.— Universal History (Anderson's.)
 Virgil's Georgics.
 Xenophon's Anabasis.
 University Algebra, (Robinson's.)

* Latin Prose Composition from beginning of Second Year onward.

SECOND TERM.—Universal History—(continued.)

Sallust's Jugurtha.
 Herodotus.
 Algebra—(continued.)
 Hand-Book of the Stars.

THIRD TERM.—Natural Philosophy.

Sallust's Cataline.
 Herodotus.
 Geometry—four Books—(Robinson's.)

Daily and weekly exercises throughout the Course, in Music, Calisthenics, Composition and Elocution.

COLLEGE COURSE.

FRESHMEN YEAR.

FIRST TERM.—Natural Philosophy.

Horace—Odes.
 Homer's Iliad.
 University Algebra, (Robinson's.)

SECOND TERM.—Meteorology, (Loomis'.)

Horace—Ars Poetica.
 Homer.
 Geometry, (Robinson's.)

THIRD TERM.—Botany, (Gray's.)

Livy.
 Thucydides.
 Geometry.

Read Bancroft's History of the United States, and Smith's History of Greece and Rome.

SOPHOMORE YEAR.

FIRST TERM.—Chemistry.

Rhetoric.
 Ovid.
 Thucydides.
 Trigonometry, (Robinson's.)

SECOND TERM.—Chemistry.

Tacitus—Germania.
 Greek Tragedies, (Woolsey's.)
 Surveying and Navigation, (Robinson's.)

THIRD TERM.—Zoology, (Agassiz'.)

Cicero de Officiis or De Senectute.
 Plato.
 Civil Engineering.

Read Greeley's American Conflict, Motley's Dutch Republic, Macaulay's History of England and D'Aubigne's History of the Reformation.

JUNIOR YEAR.

FIRST TERM. — Geology, (Dana's,) with Lectures.
Terence.
Rhetoric and United States Constitution.
Conic Sections, (Robinson's.)
German.

Elective studies—German, French and Spanish.

SECOND TERM.—Mineralogy, (Dana's.)
Physiology, (Hitchcock's,) with Lectures.
Logic, (Coppee's.)
Analytical Geometry, (Robinson's.)

Elective studies, as before, with Advanced Chemistry.

THIRD TERM. — Acoustics and Optics.
Mental Philosophy, (Haven's.)
Calculus, (Robinson's.)
Civil Government, (Townsend's.)

Elective studies, as before. Daily and weekly exercises for each of the preceding years in Music, Calisthenics, Composition and Elocution.

Read Guizot's History of Civilization, Thier's French Revolution, and Hallam's Constitutional History of England.

SENIOR CLASS.

FIRST TERM. — Astronomy, (Robinson's.)
Moral Philosophy, (Haven's.)
Political Economy, (Walker's.)

SECOND TERM.—Mechanics.
English Literature.
Butler's Analogy.

THIRD TERM. — International Law, (Woolsey's.)
Evidences of Christianity, (Hopkins'.)
Art Criticism, (Samson's.)

Original Orations, Essays, etc., during the year.

MISCELLANEOUS ITEMS.

RELIGIOUS SERVICES.

Preaching every Sabbath afternoon at the College.

LECTURES.

During each Term a course of Lectures will be given by the Faculty on subjects taught in the various Departments.

DEPORTMENT AND SCHOLARSHIP.

A Roll of Merit and of Demerit will be kept of each recitation, and the standing of each student faithfully made out at the end of each Term. This standing will be registered in the College Records, and opened to the inspection of parents and guardians of the students. A certificate of the standing, showing the deportment and scholarship of the student, will be sent to the parent or guardian when requested.

EXAMINATION.

The last three days of each Term will be occupied in examining the classes in all the Departments.

EXHIBITION.

The Exhibition of the Academic and Preparatory Department occurs at the close of the Winter Term. The usual Commencement Exercises transpire at the close of the year.

DEGREES.

The degree of "Bachelor of Arts" is conferred on students who complete the Classical Course, and pass examination in the same.

The degree of "Bachelor of Science and Agriculture" is conferred on those who complete the Scientific and Agricultural Course together, and pass a satisfactory examination in the same; and the degree of "Bachelor of Science" will be conferred on those who complete that Course alone.

On graduates of three years' standing, who have engaged during the time in professional or literary and scientific studies, will be conferred the Master's Degree. Diplomas will be given to those who shall complete the Course in Military Science and Tactics, and pass a satisfactory examination in the same, and also to those who complete the Course in the Mechanic Arts; also to those who shall complete the Commercial Course, and to those who complete the full course in Vocal and Instrumental Music.

EXPENSES.

Tuition is free in all the Departments except Instrumental Music. Ladies share the privileges of the Institution equally with gentlemen. A contingent fee of three dollars a term, or nine dollars a year, is charged

to meet the expense of fuel, lights, sweeping, etc. In Music—for instruction on the Piano, \$12.00 a term. For the use of a Piano, \$3.00 a term.

BOARD.

Board is furnished, at the Boarding House, at \$3.75 a week, with an additional charge of \$5.00 a term for fuel and lights. Washing done less at reasonable rates. A portion of the students board themselves at less expense.

RULES.

Each person who seeks to become a member of the College must present to the Faculty satisfactory testimonials of good moral character.

All students are required to observe the study hours prescribed by the Faculty.

All students are required to perform faithfully the duties and exercises, and to pursue the studies assigned them by the Faculty, and promptly to give suitable reasons for tardiness to any of their duties, or absence from them.

Undue social attentions will not be allowed.

Any student who is idle or vicious, or whose moral character is bad, or whose influence is decidedly detrimental, in the opinion of the College government, to the literary and moral interests of the College, may be reprimanded, suspended, dismissed, expelled, or otherwise punished, at the discretion of the Faculty.

Any student who, without just cause, shall fail to attend the examination, will be considered as under censure, and will not be allowed to advance with his classes without suitable amends.

Those who leave the College during term time, without permission, will be liable to suspension or expulsion.

No student will be permitted to leave any class without the consent of the Faculty.

No meeting of the students can be held in the College for the transaction of any kind of business, unless by permission of the Faculty.

Any student who shall injure or deface the buildings, in addition to such penalty as the Faculty may see fit to inflict, will be subject to the expense occasioned by the necessary repairs.

Habitual indolence, inattention to study, and attending balls in term-time, will be regarded as an offense against the laws and the spirit of the Institution, and will be made the subject of such discipline as the Faculty may deem expedient.

No student shall be permitted to recite, unless the contingent fee shall have been paid.

All students are required to attend meeting on the Sabbath, either at the Institution, or at such place of worship as they or their parents or guardians may choose.

ENDOWMENT.

The Endowment of the Kansas State Agricultural College was ninety thousand (90,000) acres of land obtained by Act of Congress of the 2d of July, 1862, which granted to the loyal States, for educational purposes, thirty thousand acres for each Senator and Representative in Congress. This land was located by a commission of faithful men, who visited and inspected in person each quarter section, and every one selected is suitable to make a good farm. It is located principally in Riley, Dickinson, Marshall, Washington and Clay counties, and much of it is near the Central Branch and Kansas Pacific Railways. Hon. I. T. Goodnow, late State Superintendent of Public Instruction, is the appointed Agent in charge of its sale. About one-half of the land has been sold and has already created a fund of nearly \$180,000, bearing interest. The income from this fund, in 1870 will be about \$16,000.

By an act of the Legislature of February, 1870, the amount the State has advanced to pay Professors from 1863 to 1869, inclusive, (\$29,134 and interest) and due the State from the Institution, is donated to the College for the development of the Agricultural Department, etc. This will insure an addition of land to the farm, making it from three to four hundred acres; will complete the proper organization of the system of labor, and enable the Department to purchase a team, construct a barn, etc.

The course pursued has given the children of the present generation, the pioneer settlers of the State, the benefit of the endowment fund, and presented one of the strongest possible motives to induce worthy families to come and settle in the State, assuring them that first class institutions of learning are open for their children.

Twenty-two counties in the State have been represented in the Institution by the names in the present Catalogue, extending through the year 1869. At least ninety-five teachers have already gone out to conduct the schools of the State. The first class, numbering five, graduated in 1867, and will compare favorably in scholarship with the graduates of any institution.

It is believed that all the conditions of the organic act, requiring the Institution to be in operation in its different departments in five years

from July 2, 1862, have been complied with. Eighty acres, including the College Square, are inclosed by a substantial stone fence, and more than forty acres are under cultivation. Forest trees, for a wind-break, and more than four hundred fruit trees are set out; also three hundred currant plants, one hundred gooseberries, five hundred grape vines, ten varieties of roses, and a great number of flowering shrubs and ornamental trees; and all that pertains to the Agricultural Department will be developed as fast as possible.

N. B.—Persons wishing to purchase the College lands, or to seek information concerning them, should address Hon. I. T. Goodnow, at Manhattan, Riley County, Kansas.

LOCATION.

The College is located in the Kansas Valley, near Manhattan, Riley county. It is about 115 miles west of Leavenworth, and about the same distance from Wyandotte and Kansas City. The distance west from Lawrence is eighty miles, and from Topeka about fifty miles, and it is fifteen miles northeast from Fort Riley. It stands on a beautiful eminence back of the town, running northeast and southwest. From the base of the building, but especially from its top, is a panoramic view seldom surpassed for beauty and loveliness. The beholder, facing the west, will see the valley of Wild Cat Creek, running up to the northwest about fifteen miles, and skirted with undulating bluffs. Facing the east the lovely scene that opens to view is made up of the thriving town of Manhattan, spread out at the junction of the Big Blue and the Kansas river, and the valley of the Kansas, extending far on below with its majestic bluffs and intervening creeks. The field of view at the left takes in a part of the valley of the Big Blue, but the conspicuous figure in front is Blue Mont, the parent of the bluffs that line the valleys of the Big Blue, and the last one the river passes ere it unites with the Kansas. A series of cone-shaped bluffs, the most of which are truncated, extend through nearly the whole line of the valley of the Big Blue. The traveler down this valley as he gazes upon these cone-like bluffs, rising on either side, covered with the verdure of spring, feeling the impression made upon him by the curved lines that bound them, blending with the hues and tints of light and shade that rise around their sides, can scarcely fail to cry out for joy, from the emotions of beauty they awaken.

Manhattan is very easy of access by Railroad and otherwise. The depot of the Kansas Pacific Railway is about two miles from the Institution. Already the cars run to Carson, 487 miles west of the Missouri river. The business of the road, from Government transportation and otherwise, is now very large and destined to increase immensely. It will be finished to Denver by September next.

The soil of the valley of the Kansas and its tributaries in extent and richness is sufficient to support millions of people, and the pioneer can now come all the way to his frontier home in the cars.

BUILDINGS.

The College building is of beautiful grey limestone, which lies in great abundance, conveniently packed in the brow of bluffs in this region, and cannot be surpassed as a material for building and fencing. The building is 60 feet in length by 44 in width, and three stories high, surmounted by a beautiful cupola, in which is an excellent bell, donated by Joseph Ingalls, of Swamscot, Massachusetts. The third story is occupied as a Chapel, capable of seating about four hundred, and is supplied with excellent chairs for the audience, a superior Organ, and table and desk for the speaker. On the second floor are four rooms—a music room, in which are a first-class Piano and a Melodeon—and three recitation rooms, with hall and stairway. On the lower floor are the hall, the President's office, a large library room, an assembly or school room, and a large recitation room. The Library already has nearly 3,000 volumes, and is constantly increasing, \$1,000 worth of books having been added to it by donations during the past two years.

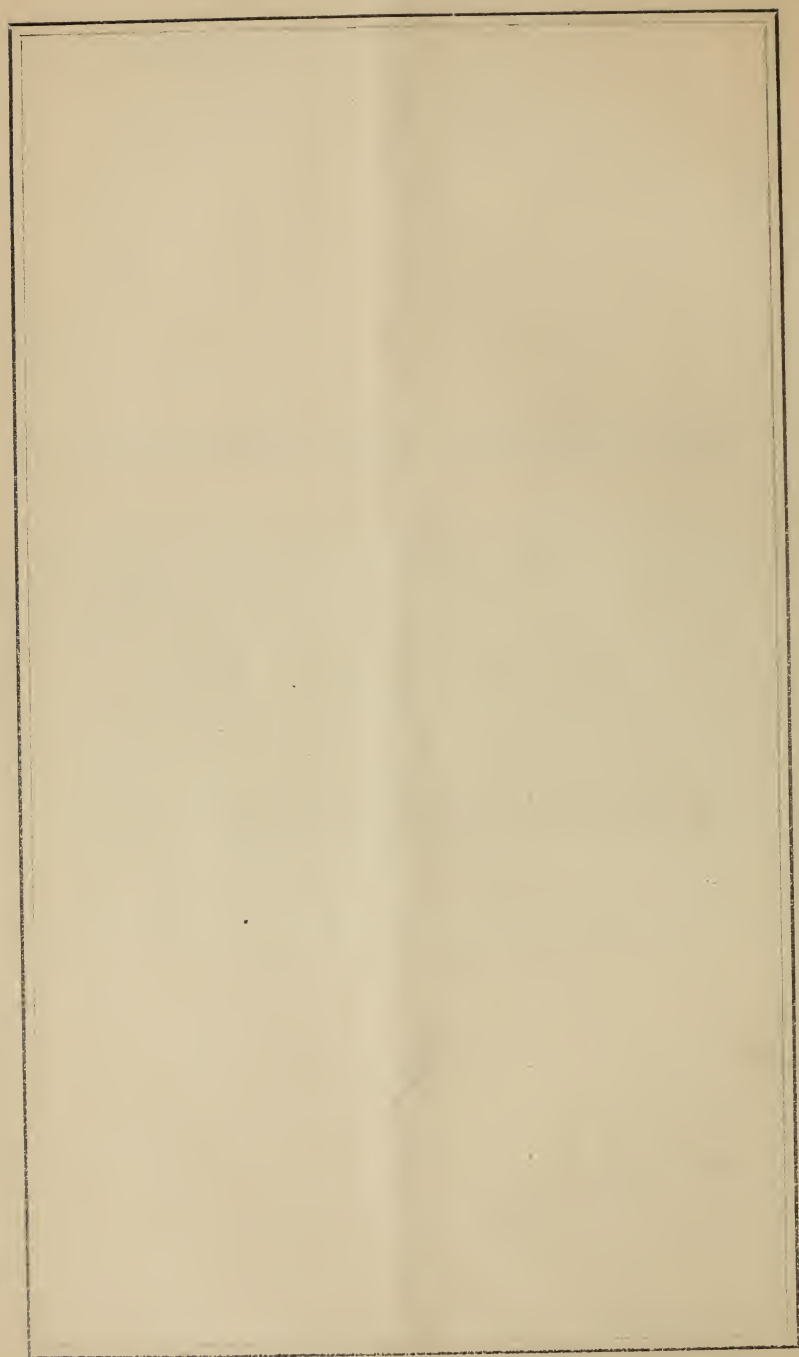
The Boarding House is an ample stone building, thoroughly built and well furnished, and capable of accommodating sixty students.

APPARATUS AND CABINET.

The College is provided with a good assortment of Philosophical and Chemical Apparatus, sufficient to perform all experiments required in teaching Natural Philosophy and Chemistry. We have over two hundred and fifty pieces, embracing about one hundred and fifty different kinds of instruments. To these valuable additions are being made from time to time, to supply the increasing wants of the Institution.

The Cabinet, donated by Prof. Mudge, consists of a very extensive variety of minerals and ores, collected by him during a residence of twenty-five years in New England. Many of them are quite rare and valuable. In addition to this, the College possesses a good collection of specimens from various parts of this State, illustrating the geology of Kansas. To these, specimens are constantly being added. This Cabinet is of great value in pursuing the studies of Agriculture, Geology, Mineralogy, and kindred Sciences.

Skeletons, Models of the Eye, Plates and Diagrams, are provided for the use of the students of Anatomy and Physiology.



CATALOGUE

OF THE

OFFICERS AND STUDENTS

OF THE

Kansas State Agricultural College,

MANHATTAN, KANSAS.

~~~~~  
1870—71.  
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MANHATTAN, KANSAS:

PRINTED AT THE OFFICE OF THE NATIONALIST.

1871.

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Professor of Agricultural Chemistry, Mechanic Arts and Commercial
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Professor of Practical Agriculture and Superintendent of the Farm.

Professor of Military Science and Tactics.

E. GALE,
Instructor in Horticulture and Superintendent of the Nursery.

MARY F. HOVEY,
Professor of German and English Literature.

LIZZIE J. WILLIAMS,
Teacher of Drawing, and Tutor.

HATTIE V. WERDEN,
Teacher of Instrumental Music.

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Horticulture and Pomology.

REV. J. H. LEE,
Ornithology.

CHARLES V. RILEY,
Economic Entomology.

E. GALE,
Forest Culture.

Veterinary Science.

STUDENTS.

Agricultural and Literary Course.

Freshman Year.

NAMES.	RESIDENCES.
Campbell, Ellen L.....	<i>Blue Mont.</i>
Campbell, Alice M.....	<i>Blue Mont.</i>
Davis, William B.....	<i>Manhattan.</i>
Gilbert, William D.....	<i>Grasshopper.</i>
Humphrey, Chester B.....	<i>Milford.</i>
Knipe, Laura B.....	<i>Blue Mont.</i>
Little, George B.....	<i>Illinois.</i>
Perkins, Lillian F.....	<i>Manhattan.</i>
Sanford, Albert H.....	<i>Zeandale.</i>
Soupene, John C.....	<i>Pleasant View.</i>
Stewart, Alice E.....	<i>Blue Mont.</i>
Walker, Claudius D.....	<i>Winchester.</i>
Whitney, Ella J.....	<i>Blue Mont.</i>

Sophomore Year.

Davis, Eliza F.....	<i>Manhattan.</i>
Houston, L. Dexter.....	<i>Blue Mont.</i>
Kimble, Samuel.....	<i>Wild Cat Creek.</i>
Mudge, Eusebia B.....	<i>Blue Mont.</i>
Smith, William K.....	<i>Atchison.</i>
White, William Farel.....	<i>Ashland.</i>
White, A. Judson.....	<i>Ashland.</i>

Junior Year.

NAMES.	RESIDENCES.
Denison, Emma J.....	<i>Blue Mont.</i>
Haines, Anna M.....	<i>Zeandale.</i>
Haines, Theophania M.....	<i>Zeandale.</i>
Todd, Albert,.....	<i>Manhattan.</i>
Williston, S. Wendell,.....	<i>Manhattan.</i>

Senior Year.

Campbell, Emily C.....	<i>Blue Mont.</i>
Denison, Ellen F.....	<i>Blue Mont.</i>
Houston, M. Luella,.....	<i>Blue Mont.</i>
White, Kate,.....	<i>Blue Mont.</i>
Whedon, Charles O.....	<i>Manhattan.</i>

Scientific College Course.

NAMES.	RESIDENCES.
Brous, Harry A.....	<i>Manhattan.</i>
Hipple, Oliver P.....	<i>Monrovia.</i>
Green, Miss Mary Elis.....	<i>Blue Bottom.</i>
Thurston, Miss Maggie A.....	<i>Manhattan.</i>

Preparatory Department.

Young Gentlemen.

NAMES.	RESIDENCES.
Armstead, Robert.....	<i>Grasshopper Falls.</i>
Anthony, George H.....	<i>Leavenworth.</i>
Banks, Wm. Robert.....	<i>Wabunsec.</i>
Benton, Carmil O.....	<i>Louisville.</i>
Benton, James O.....	"
Benton, Lewis O.....	"
Beal, William H.....	<i>Ashland.</i>
Blain, James E.....	<i>Vienna.</i>
Blain, George C.....	"
Burroughs, Charles Frank.....	<i>Blue Mont.</i>
Bliss, George F.....	<i>Oskaloosa.</i>
Beatty, William S.....	<i>Republican City.</i>
Baker, Jacob H.....	<i>Osauckee.</i>
Bird, Nathaniel S.....	<i>Atchison.</i>
Bird, Lorenzo F.....	"
Browning, Walter J.....	<i>Blue Mont.</i>
Benson, Albert Lewis.....	<i>Topoka.</i>
Baldwin, Alvah S.....	<i>Lawrence.</i>
Bill, Wilbur Fisk.....	<i>Blue Mont.</i>
Birch, Harry.....	<i>Battle Ground, Ind.</i>
Bishop, Frank W.....	<i>Monrovia.</i>
Blackley, Andrew True.....	<i>Colorado.</i>
Brons, Alfred H.....	<i>Pottawatomie County.</i>
Campfield, Elwin.....	<i>Centralia.</i>
Campbell, Lewis E.....	<i>Blue Mont.</i>
Campbell, Arthur M.....	" "
Clark, William A.....	<i>Washington.</i>
Clark, Edgar F.....	<i>Manhattan.</i>
Colburn, Edward F.....	<i>Hays City.</i>
Cox, Herbert F.....	<i>Burlington.</i>
Cox, Charles W.....	"

NAMES.	RESIDENCES.
Davis, John E.....	<i>Burlington.</i>
Denison, George,.....	<i>Blue Mont.</i>
Davidson, Willie	" "
Davidson, G. Kennedy.....	" "
Fisher, Robert K.	<i>Council Grove.</i>
Ferguson, Walter.....	<i>Grasshopper Falls.</i>
Funnell, William P.....	<i>Clifton, Washington Co.</i>
Gale, George A.....	<i>Manhattan.</i>
Gaff, John Van Lear....	<i>Denver, Col.</i>
Galbraith, George H.	<i>Laramie, Wyoming T.</i>
Giles, Francis C.....	<i>America City.</i>
Greeley, Edward H.	<i>Manhattan.</i>
Griffing, John S.	<i>Blue Mont.</i>
Gilbert, Nathan S.....	<i>Junction City.</i>
Green, Thomas H.....	<i>Blue Bottom.</i>
Gregg, Horace Z.....	<i>Manhattan.</i>
Grover, Orria W.	<i>Savanna, Pot. Co.</i>
Hitchcock, Albert Milton.....	<i>Humboldt.</i>
Hunzinger, Adolph H.....	<i>Olathe.</i>
Harding, Robert R.....	<i>Ashland.</i>
Hall, James W.	<i>Wamego.</i>
Hannum, George W.....	<i>America City.</i>
Hays, Charles L.	<i>Olathe.</i>
Hibbard, Russell A.....	<i>Manhattan.</i>
Higinbotham, Lewis F.....	"
Hipple, Samuel L.....	<i>Monrovia.</i>
Hethrington, Clifford S.....	<i>Atchison.</i>
Houston, Charles S.....	<i>Blue Mont.</i>
Hostutter, James J.....	<i>Vienna.</i>
Hougham, Henry.....	<i>Blue Mont.</i>
Humphrey, Charles R.....	<i>Miford.</i>
Humphrey, Howard K.....	"
Jay, John Washington.....	<i>Kit Carson.</i>
Jeffrey, Charles H.....	<i>Wabaunsee Co.</i>
Knipe, William.....	<i>Blue Mont.</i>
King, Thomas A.....	<i>Eureka Valley.</i>
Lee, Francis Corydon.....	<i>Blue Mont.</i>
Lofinck, Reuben E.....	<i>Manhattan.</i>
Laurent, Charles Lewis.....	<i>Topeka.</i>
Lowe, Philip Aubrey.....	<i>Doniphan.</i>
Lowe, William S.....	<i>Salina.</i>
Moses, George A.....	<i>Manhattan.</i>

NAMES.	RESIDENCES.
McC'enahan, Wm. F.....	<i>Ottawa.</i>
Malby, William.....	<i>Salina.</i>
Miller, Charles M.....	<i>Leavenworth.</i>
McClure, Patterson F.....	<i>Junction City.</i>
Morris, Charles Hensley	<i>Ogden.</i>
Morgan, Noah.....	<i>Riley Center.</i>
Pierce, Frank H	<i>Blue Mont.</i>
Petigrew, David A.....	<i>St. George.</i>
Powers, Pomeroy.....	<i>Manhattan.</i>
Pinkerton, Thomas E.	<i>Zeandale.</i>
Quimby, Frank B.....	<i>Madura, Clay Co.</i>
Rockefeller, John P.....	<i>Washington.</i>
Rash, Caleb Howard.....	<i>Salina.</i>
Ritchie, Hale.....	<i>Topeka.</i>
Ross, Arthur	<i>Lawrence.</i>
Rockwell, George A.....	<i>Junction.</i>
Sanders, George E.....	<i>Manhattan.</i>
Rose, Charles A.	<i>Wabaunsee.</i>
Rose, Elgar D.....	"
Shaw, Edward.....	<i>Logansport, Ind.</i>
Stancliff, David R. (deseased.).....	<i>Illinois.</i>
Stewart, Arthur F.	<i>Blue Mont.</i>
Stringfield, Thomas H.....	<i>Falls City, Neb.</i>
Stringfield, John W.....	" " "
Sturgeon, Thomas J.....	<i>Rocky Ford.</i>
Stillman, James A.	<i>Blue Bottom.</i>
Tourjee, Jeremiah H.....	<i>Rhode Island.</i>
Tibbets, William M.....	<i>Olathe, Johnson Co.</i>
Trosper, Robert E.....	<i>Frankfort, Marshall Co.</i>
Vincent, William D.....	<i>Manhattan.</i>
Ulrich, William.....	"
Webster, Arthur W.....	<i>Baldwin City.</i>
West, Henry I	<i>Wamego.</i>
Williams, Thomas E.	<i>Ashland.</i>
Zimmerman, Isare Wm.....	<i>Vienna.</i>

Young Ladies.

NAVES.	RESIDENCES.
Baldwin, Mary Louisa	<i>Manhattan.</i>
Blain, Anna.....	<i>Vienna.</i>
Burroughs, Jettie	<i>Blue Mont.</i>
Brande, Laura E.....	<i>Council Grove.</i>
Campbell, Fannie L.	" "
Child, Ella S.	<i>Rocky Ford.</i>
Davidson, Lizzie McG.....	<i>Blue Mont.</i>
Dearborn, Carrie A.....	" "
Dearborn, Leila D.....	" "
Dennis, Ella N.	" "
Dimmock, Myra J.	<i>Manhattan.</i>
Dodgeon, Mattie R.....	<i>Louisville.</i>
Foreman, Fanny M.....	<i>Topeka.</i>
Gale, Ella M.....	<i>Manhattan.</i>
Gove, Lucinda J.....	"
Greeley, Fannie A.....	<i>Ashland.</i>
Foster, Mary A.	<i>Manhattan.</i>
Green, Mary E	<i>Blue Bottom.</i>
Gilbert, E. Anna.....	<i>Junction City.</i>
Harding, Leoma A.....	<i>Ashland.</i>
Haynes, Ida Z	<i>Peach Creek, Clay Co.</i>
Himes, Phoebe E.....	<i>Blue Mont.</i>
Hougham, Eliza	" "
Hoyt, Kate S.....	<i>Manhattan.</i>
Hudson, Maggie,	<i>Fort Harker.</i>
Hitchcock, Elsie A.....	<i>Humboldt.</i>
Huggins, Myra J.	<i>Ohio.</i>
Kimball, Carrie M.....	<i>Blue Mont.</i>
Knipe, Mary Elis	" "
Knipe, Susanna J	" "
King, Emily M.....	<i>Manhattan.</i>
King, Martha E.	"
King, Carrie M.....	"
Kurtz, Eva J.....	"
Mails, Celia	<i>Pottawatomie Co.</i>
Maltby, Ella J.....	<i>Salina.</i>
McCrea, Anna	<i>Clay Center.</i>
Mitchell, Angie B.....	<i>Junction City.</i>
Miller, Isabella J.....	<i>Manhattan.</i>
Parish, Eugenie F.....	"
Parish, Ida H.....	"

NAMES.	RESIDENCES.
Parkinson, Hattie A.	<i>Blue Mont.</i>
Phillips, Maggie J.	<i>Blue Bottom.</i>
Petty, Hannah D.	<i>Pardee, Atchison Co.</i>
Smith, Gracie	<i>Connecticut.</i>
Speer, Eva.	<i>Lawrence.</i>
Stevens, Nannie.	<i>Salina.</i>
Tempiro, Louisa E.	<i>Clay Center.</i>
Thurston, Nettie F.	<i>Manhattan.</i>
Ward, Angie.	<i>Irving.</i>
Whitney, Hattie E.	<i>Blue Mont.</i>
Woodward, Julia M.	<i>Ashland.</i>

S U M M A R Y .

Senior.	5
Junior	5
Sophomore	7
Freshman	13
Scientific Collegiate Course	4
Peparyatory Department	16)
Total.	<u>194</u>

CALENDAR.

1871—1872.

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1871. Jan'ry 4 — Winter Term begins.
March 24 — Winter Examination begins.
March 30 — Spring Term begins.
June 16 — Annual Examination begins.
June 21 — Commencement Exercises.
Sept. 6 — Fall Term begins.
Dec. 15 — Fall Examination begins.
Dec. 20 — Fall Term ends.

1872. Jan'ry 3 — Winter Term begins.
March 23 — Examination begins.
March 28 — Commencement Exercises.
April 5 — Spring Term begins.
June 23 — Spring Examination begins.
June 28 — Spring Term ends.

COURSES OF STUDY.

Agricultural Course.
Mechanic Arts.
Military Science.
Literary Course.
Preparatory Course.

AGRICULTURAL COURSE.

Freshman Year.

- FIRST TERM. — Commercial Science.
Algebra, University.
Free-hand Drawing.
Weekly Composition and Declamation.
- SECOND TERM. — Zoology.
Geometry.
Physical Geography.
Weekly Composition and Declamation.
- THIRD TERM. — Natural Philosophy, (with Experiments.)
Geometry.
Physiology and Hygiene.
Weekly Literary Exercises.

Sophomore Year.

- FIRST TERM. — Botany, (Analysis and Classification.)
Trigonometry, (with Practice.)
Practical Agriculture, (Lectures.)
Weekly Literary Exercises.
- SECOND TERM. — Inorganic Chemistry, (with Experiments.)
Surveying and Farm Engineering, (Leveling, Fencing, Roads, Drains, &c.)
Animal Physiology.
Weekly Literary Exercises.

THIRD TERM. — Organic Chemistry, (with Experiments.)
Mensuration, (with Practice.)
Geology, (with Excursions.)
Weekly Literary Exercises.

Junior Year.

FIRST TERM. — Agricultural Chemistry.
Astronomy.
Entomology.
Rhetoric.
Weekly Composition and Discussion.

SECOND TERM. — Vegetable Physiology.
Physics, (Properties of bodies Examined.)
Arboriculture and Pomology, (Lectures, semi-weekly.)
Logic, (tri-weekly.)
Weekly Composition and Discussion.

THIRD TERM. — Veterinary Science, (Lectures.)
Mechanics.
Meteorology.
Political Economy.
Weekly Composition and Discussion.

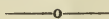
Senior Year.

FIRST TERM. — Horticulture, (Lectures, tri-weekly.)
Landscape Gardening, (Lectures.)
Constitutional Law, (tri-weekly.)
History, (semi-weekly.)
French or German.
Weekly Composition and Discussion.

SECOND TERM. — Farm Tillage.
Breeding and Management of Stock, (Lectures.)
Mental Philosophy, (tri-weekly.)
History, (semi-weekly.)
English Literature.
French or German.
Weekly Composition and Discussion.

THIRD TERM. — Rural Economy.
Moral Philosophy, (tri-weekly.)
History, (semi-weekly.)
English Literature.
Mineralogy.
Weekly Essays and Discussions.

MECHANIC ARTS.



Freshman Year.

- FIRST TERM.** — Commercial Science.
Algebra, University.
Free-hand Drawing.
Weekly Composition and Declamation.
- SECOND TERM.** — Zoology.
Geometry.
Physical Geography.
Weekly Composition and Declamation.
- THIRD TERM.** — Natural Philosophy, (with Experiments.)
Geometry.
Physiology and Hygiene.
Weekly Literary Exercises.

Sophomore Year.

- FIRST TERM.** — Botany, (Analysis and Classification.
Trigonometry, (with Practice.)
Practical Agriculture, (Lectures.)
Weekly Literary Exercises.
- SECOND TERM.** — Inorganic Chemistry, with Experiments.
Surveying and Farm Engineering, (Leveling, Fencing, Roads, Drains, &c.)
Animal Physiology.
Weekly Literary Exercises.
- THIRD TERM.** — Organic Chemistry, (with Experiments.)
Mensuration, (with Practice.)
Geology, (with Excursions.)
Weekly Literary Exercises.

Junior Year.

- FIRST TERM.** — Agricultural Chemistry.
Astronomy.
Entomology.
Rhetoric.
Weekly Composition and Discussion.

SECOND TERM. — Vegetable Physiology.

Physics, (Properties of bodies Examined.)

Arboriculture and Pomology, (Lectures, semi-weekly.)

Logic, (tri-weekly.)

Weekly Composition and Discussion.

THIRD TERM. — Conic Sections.

Mechanics.

Meteorology.

Political Economy.

Weekly Composition and Discussion.

Senior Year.

FIRST TERM. — Analytical and Descriptive Geometry.

Shades, Shadows and Perspective.

Constitutional Law, (tri-weekly.)

History, (semi-weekly.)

French or German.

Weekly Composition and Discussion.

SECOND TERM. — English Literature.

Strength of Material.

Mental Philosophy, (tri-weekly.)

History, (semi-weekly.)

English Literature.

French or German.

Weekly Composition and Discussion.

THIRD TERM. — Study of Architecture and Models, and Machine Drawing.

Moral Philosophy, (tri-weekly.)

History, (semi-weekly.)

English Literature.

French or German.

Mineralogy.

Weekly Essays and Discussions.

MILITARY SCIENCE.

—o—

Freshman Year.

- FIRST TERM. — Commercial Science.
 Algebra, University.
 Free hand Drawing.
 Weekly Composition and Declamation.
- SECOND TERM. — Zoology.
 Geometry.
 Physical Geography.
 Weekly Composition and Declamation.
- THIRD TERM. — Natural Philosophy, (with Experiments.)
 Geometry.
 Physiology and Hygiene.
 Weekly Literary Exercises.

Sophomore Year.

- FIRST TERM. — Botany, (Analysis and Classification.)
 Trigonometry, (with Practice.)
 Practical Agriculture, (Lectures.)
 Weekly Literary Exercises.
- SECOND TERM. — Inorganic Chemistry, (with Experiments.)
 Surveying and Farm Engineering, (Leveling, Fencing, Roads, Drains, &c.)
 Animal Physiology.
 Weekly Literary Exercises.
- THIRD TERM. — Organic Chemistry, (with Experiments.)
 Mensuration, (with Practice.)
 Geology, (with Excursions.)
 Weekly Literary Exercises.

Junior Year.

- FIRST TERM. — Infantry Tactics. } School of Soldier.
 } School of Company.
 Astronomy.
 Entomology.
 Rhetoric.
 Weekly Composition and Discussion.

LITERARY COURSE.

—e—

Freshman Year.

- FIRST TERM.** -- Commercial Science.
Algebra, University.
Free-hand Drawing.
Sallust.
Weekly Composition and Declamation.
- SECOND TERM.** -- Zoology.
Geometry.
Physical Geography.
Homer.
Weekly Composition and Declamation.
- THIRD TERM.** -- Natural Philosophy, (with Experiments.)
Geometry.
Physiology and Hygiene.
Horace.
Weekly Literary Exercises.

Sophomore Year.

- FIRST TERM.** -- Botany, (Analysis and Classification.)
Trigonometry, (with Practice.)
Practical Agriculture, (Lectures.)
Hesiod.
Weekly Literary Exercises.
- SECOND TERM.** -- Inorganic Chemistry, (with Experiments.)
Surveying and Farm Engineering, (Leveling, Fencing, Roads, Drains, &c.)
Animal Physiology.
Livy.
Weekly Literary Exercises.
- THIRD TERM.** -- Organic Chemistry, (with Experiments.)
Mensuration, (with Practice.)
Geology, (with Excursions.)
Thucydides.
Weekly Literary Exercises.

Junior Year.

FIRST TERM. — Tacitus Germania.

Astronomy.

Entomology.

Rhetoric.

Weekly Composition and Discussion.

SECOND TERM. — Thucydides.

Physics, (Properties of bodies Examined.)

Arboriculture and Pomology, (Lectures.)

Logic, (tri-weekly.)

Weekly Composition and Discussion.

THIRD TERM. — Cicero de Senectute.

Conic Sections.

Mechanics.

Political Economy.

Weekly Literary Exercises.

Senior Year.

FIRST TERM. — Plato.

Constitutional Law, (tri-weekly.)

History, (semi-weekly.)

Analytical and Descriptive Geometry.

French or German.

Weekly Literary Exercises.

SECOND TERM. — Latin Readings—Ovid.

English Literature.

Mental Philosophy, (tri-weekly.)

History, (semi-weekly.)

French or German.

Weekly Literary Exercises.

THIRD TERM. — Latin Readings—Columella.

Moral Philosophy, (tri-weekly.)

History, (semi-weekly.)

English Literature.

French or German.

Weekly Literary Exercises.

NOTE.—In addition to the class-room lectures, weekly lectures are given before all the students, upon topics germane to the studies of the several departments.

Preparatory Department.

AGRICULTURAL COURSE.

First Year.

FIRST TERM. — Higher Mental Arithmetic.
English Grammar.
Geography.
Agricultural Class Instruction.

SECOND TERM. — Arithmetic.
English Grammar.
Geography.
Agricultural Class Instruction.

THIRD TERM. — History United States.
Arithmetic.
Analysis.
Agricultural Class Instruction.

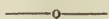
Second Year.

FIRST TERM. — Advanced Mental Arithmetic.
History and Constitution United States.
English Composition.
Agricultural Class Instruction.

SECOND TERM. — Elements of Physiology.
Higher Arithmetic.
Algebra.
Agricultural Class Instruction.

THIRD TERM. — Algebra.
Bookkeeping.
Agricultural Class Instruction.

LITERARY COURSE.



First Year.

FIRST TERM. — Higher Mental Arithmetic.
Latin Grammar.
Greek Grammar.
Agricultural Class Instruction.

SECOND TERM. — Arithmetic.
Latin Lessons.
Greek Lessons.
Agricultural Class Instruction.

THIRD TERM. — History United States.
Cæsar.
Xenophon.
Agricultural Class Instruction.

Second Year.

FIRST TERM. — Advanced Mental Arithmetic.
Cornelius Nepos.
Xenophon.
Agricultural Class Instruction.

SECOND TERM. — Higher Arithmetic.
Virgil's Georgics.
Herodotus.
Algebra.
Agricultural Class Instruction.

THIRD TERM. — Algebra.
Bookkeeping.
Virgil's Georgics.
Herodotus.
Agricultural Class Instruction.

Exercises in reading, writing, spelling, elocution, vocal music and calisthenics during each term.

Miscellaneous Items.

RELIGIOUS SERVICES.

Preaching every Sabbath afternoon at the College, by clergymen of the different denominations.

REQUIREMENTS FOR ADMISSION.

Preparatory Department. — Examination in Reading, Spelling, Geography, English Grammar and Elementary Rules of Arithmetic.

Agricultural Department. — Age fourteen years, and examination in Reading, Writing, Modern Geography, English Grammar and Analysis, Arithmetic and Elementary Algebra.

Literary Department. — Age fourteen years, and Examination in the studies laid down in the Preparatory Department, or their equivalents.

Ladies share the advantages of the Institution equally with gentlemen.

DEPORTMENT AND SCHOLARSHIP.

A Roll of Merit and of Demerit will be kept of each recitation, and the standing of each student faithfully made out at the end of each Term. This standing will be registered in the College Records, and opened to the inspection of parents and guardians of the students. A certificate of the standing, showing the deportment and scholarship of the student, will be sent to the parent or guardian when requested.

EXAMINATION.

The last three days of each Term will be occupied in examining the classes in all the Departments.

EXHIBITION.

The Exhibition of the Academic and Preparatory Department occurs at the close of the Fall Term: the Commencement Exercises at the close of the academic year.

DEGREES.

The Degree of "Bachelor of Agriculture" will be conferred upon those who satisfactorily complete the Course in Agriculture, and appropriate Degrees upon those who complete the other Courses of Study.

MUSIC.

A graded system of Music has been adopted, by which the pupils are taught in classes, and pass regular examinations, as in other studies. While this increases the thoroughness of drill, it decreases the cost. Beside the charge of \$3 a term, for use of the piano, the tuition, during the two preparatory and two college years will be only \$16 a year, or \$6 a term. During the third college year it will be only \$6 a year, or \$2 a term; and the fourth year it will be free. This department is under the direction of MRS. H. V. WERDEN, with able assistants.

EXPENSES.

Tuition is FREE in all the Departments except that of Instrumental Music.

B O A R D .

The Boarding House has been thoroughly renovated, and placed under the charge of Mr. AMBROSE TODD, as Steward. Free rooms will be allotted in the order of application. It is preferred that students furnish their own rooms; but, when desired, the College will furnish stove and bedstead. Board will be \$3.50 per week, payable monthly, in advance, and a discount of five per cent allowed if paid in advance for the term. Board bills will be paid at the counter of E. B. PURCELL, Treasurer.

Students will furnish their own wood, lights and washing; but hard-wood, non-explosive lamps, and washing, will be provided by the Steward at low rates.

R U L E S .

Each person who seeks to become a member of the College must present to the Faculty satisfactory testimonials of good moral character.

All students are required to faithfully perform the duties and exercises, and to pursue the studies assigned them by the Faculty, and promptly to give suitable reasons for tardiness in the performance of any of their duties, or absence from them.

Undue social attentions will not be allowed.

Any student who is idle or vicious, or whose moral character is bad, or whose influence is decidedly detrimental, in the opinion of the College Government, to the literary and moral interests of the College, may be reprimanded, suspended, dismissed or expelled, at the discretion of the Faculty.

Any student who, without just cause, shall fail to attend the examination, will be considered as under censure, and will not be allowed to advance with his classes without suitable amends.

Those who leave the College during term time, without permission, will be liable to suspension or expulsion.

No student will be permitted to leave any class without the consent of the Faculty.

No meeting of the students can be held in the College for the transaction of any kind of business, unless by permission of the Faculty.

Any student who shall injure or deface the buildings, in addition to such penalty as the Faculty may see fit to inflict, will be subject to the expense occasioned by the necessary repairs.

Habitual indolence, inattention to study, and attending balls in term-time, will be regarded as offenses against the laws and the spirit of the institution, and will be made the subject of such discipline as the Faculty may deem expedient.

All Students are required to attend church on the Sabbath, either at the Institution or at such place of worship as they, or their parents or guardians, may choose.

ENDOWMENT.

The Endowment of the Kansas State Agricultural College was ninety thousand (90,000) acres of land. obtained by Act of Congress of the 2d of July, 1862, which granted to the loyal States, for educational purposes, thirty thousand acres for each Senator and Representative in Congress. This land was located by a commission of faithful men, who visited and inspected in person each quarter section, and every one selected is suitable to make a good farm. It is located principally in Riley, Dickinson, Marshall, Washington and Clay counties, and much of it is near the Central Branch and Kansas Pacific Railways. Hon. I. T. Goodnow, late Superintendent of Public Instruction, is the appointed Agent in charge of its sale. About one half of the land has been sold, and has already created a fund of over \$180,000, bearing interest. About \$130,000 of this is in notes of parties who have purchased the land, and is bearing ten per cent interest. Some \$50,000 of principal that had been paid in, was, by Act of Legislature approved March 2d 1871, placed in the hands of the Regents to invest, and they have determined to purchase directly of School Boards, School District Bonds legally issued. Thus they can pay the full market price of these bonds directly to the district, and make one educational fund of the State aid another. By payment of principal the \$130,000 will be added to the \$50,000, and aid in the erection of school houses.

School Districts about to issue bonds may address E. GALE, Loan Commissioner, at Manhattan.

COLLEGE FARM.

The Township of Manhattan, in April 1871, voted \$12,000, in bonds, for the purchase of additional land for the farm; and the Regents have joined with this a part of the farm development appropriation of 1870, and have purchased three hundred and fifteen acres of land. One hundred and fifty-five acres of this is a beautiful roll adjoining the town site of Manhattan—a most suitable situation for the development of a great institution.

The home Farm of the College, now consisting of four hundred and fifteen acres, gives for experiment the three varieties of Kansas soil,—high prairie, creek bottom and second bottom. It is nearly all under fence and cultivation. Major FRED E. MILLER, from the Michigan Agricultural College, has charge of the farm, and will give instruction in practical agriculture. Students are paid for labor upon the farm.

HORTICULTURE.

In the orchards of the College farm there are about one thousand apple trees, and as many peach trees, with a full assortment of other fruits. There are nearly three acres of vineyard, and over thirty-eight thousand trees in the nursery. With ample means of illustration, E. GALE, an experienced nurseryman, teaches practical Horticulture: this, supplemented by the lectures of Dr. WARDER, the veteran pomologist renders this department of special value.

S T O C K .

The College has in its employ JAMES C. MAYOS, an intelligent English stock breeder, with tolerable facilities for taking care of stock. As soon as the resources of the college will permit, choice animals will be obtained. It is hoped the State will provide an ample barn before long.

L O C A T I O N .

THE College is located at Manhattan, on the Kansas Pacific Railway. The place is noted for its beauty and healthfulness, and the people for their intelligence and morality.

Apparatus, Cabinet and Library.

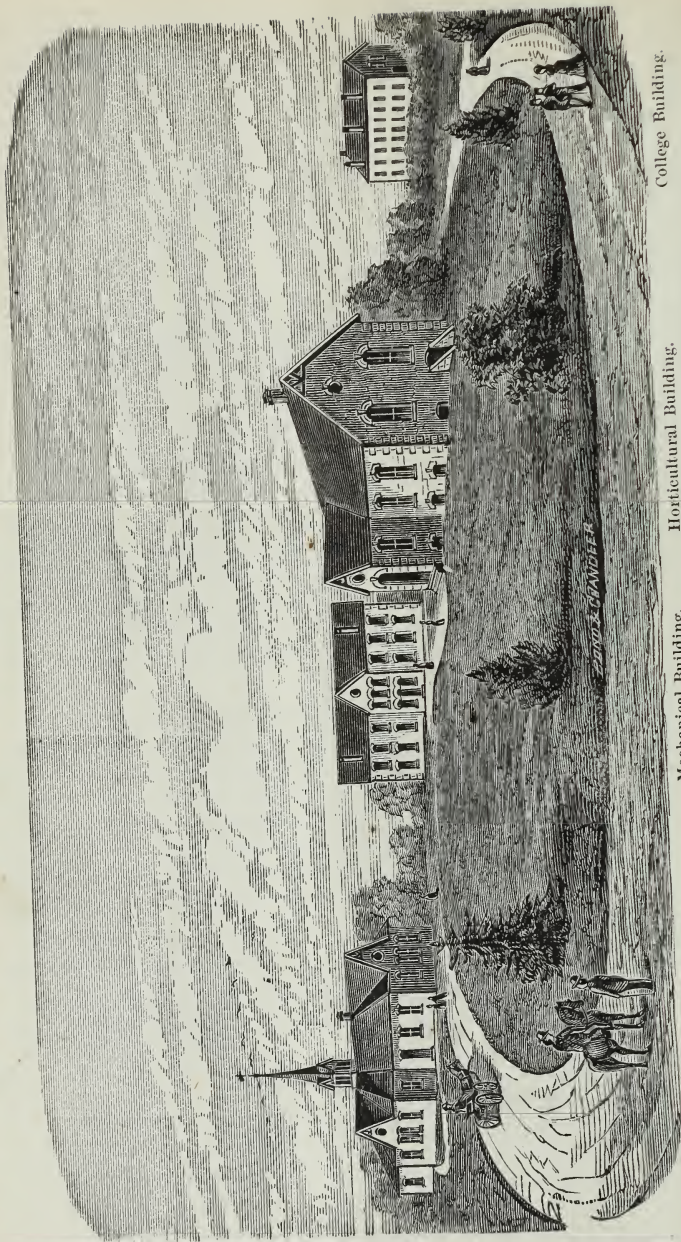
The College is provided with a good assortment of Philosophical and Chemical Apparatus, sufficient to perform all experiments required in teaching Natural Philosophy and Chemistry. We have over two hundred and fifty pieces, embracing about one hundred and fifty different kinds of instruments. To these, valuable additions are being made from time to time, to supply the increasing wants of the Institution.

The Cabinet, donated by Prof. Mudge, consists of a very extensive variety of minerals and ores, collected by him during a residence of twenty-five years in New England. Many of them are quite rare and valuable. In addition to this, the College possesses a good collection of specimens from various parts of this State, illustrating the geology of Kansas. To these, specimens are constantly being added. This Cabinet is of great value in pursuing the studies of Agriculture, Geology, Mineralogy and kindred Sciences.

The Library has nearly three thousand volumes, and will be increased by yearly accessions.

Skeletons, Models of the Eye, Plates and Diagrams, are provided for the use of the students of Anatomy and Physiology.





Laboratory Building.

Mechanical Building.

Horticultural Building.

College Building.

KANSAS STATE AGRICULTURAL COLLEGE.

BIENNIAL CATALOGUE

OF THE



KANSAS

State Agricultural College,

MANHATTAN, KANSAS.

CALENDAR YEARS 1873-77.

MANHATTAN, KANSAS:
PRINTING DEPARTMENT, AGRICULTURAL COLLEGE.
1877.

BOARD OF REGENTS.

M. J. SALTER, *Chairman*, Thayer, Neosho County.
N. A. ADAMS, *Secretary*, Manhattan, Riley County.
J. LAWRENCE, Beloit, Mitchell County.
B. L. KINGSBURY, Burlington, Coffey County.
J. R. HALLOWELL, Columbus, Cherokee County.
STEPHEN M. WOOD, Elmdale, Chase County.
JNO. A. ANDERSON, Manhattan, Riley County.

E. B. PURCELL, *Treasurer*, Manhattan, Kansas.
L. R. ELLIOTT, *Land Agent*, Manhattan, Kansas.
E. GALE, *Loan Commissioner*, Manhattan, Kansas.

FACULTY.

JNO. A. ANDERSON, A. M., *President, Professor Political Economy.*
MILAN L. WARD, A. M., *Professor Mathematics and English.*
WILLIAM K. KEDZIE, M. S., *Professor Chemistry and Physics.*
EDWARD M. SHELTON, M. S., *Professor Practical Agriculture.*
ELBRIDGE GALE, *Professor Botany and Practical Horticulture.*
J. E. PLATT, A. M., *Professor Elementary English and Mathematics.*
JOHN D. WALTERS, *Teacher of Industrial Drawing.*
AMBROSE TODD, *Superintendent Mechanical Department.*
ALBERT A. STEWART, *Superintendent Printing Department.*
WALTER C. STEWART, *Superintendent Telegraph Department.*
MRS. M. E. CRIPPS, *Superintendent Sewing Department.*
MISS CARRIE STEELE, *Teacher of Instrumental Music.*

NON-RESIDENT LECTURER.

HON. D. J. BREWER, *Associate Justice of the Kansas Supreme Court,*
Lecturer on Practical Law.

POLICY.

On the first day of April, 1873, and in accordance with an Act approved March 6, 1873, a new Board of Regents assumed control of the Kansas State Agricultural College. During that summer radical changes were made in the management and methods of the Institution, and on September 3, 1873, the Board officially announced its purposes in the following words:

“For the purpose of defining the policy of the Board of Regents of the Kansas State Agricultural College, and as a guide to the Faculty in preparing a new curriculum:

“*Resolved*, That the object of this Institution is to impart a liberal and practical education to those who desire to qualify themselves for the actual practice of agriculture, the mechanic trades, and industrial arts.

“Prominence shall be given to agriculture and these arts in the proportion that they are severally followed in the State of Kansas.

“Prominence shall be given to the several branches of learning which relate to agriculture and the mechanic arts, according to the directness and value of their relation.”

During the past four years this line has been strictly followed, not merely in profession, but in spirit and fact. The

course of instruction, which as certainly determines the direction of the student's progress as do the iron rails the direction of a train's movement, has been rebuilt and fully conformed to this policy. The several departments of instruction have been entirely reconstructed; and are manned by able and enthusiastic specialists, harmoniously working with brain and hand for the speediest attainment of the designated object. To the outer limit of the facilities at their disposal, both the Regents and their appointees have used all legitimate means, and made every effort, to put within easy reach of the working classes of Kansas exactly that knowledge and physical drill which are of most value to those who expect to earn a livelihood by farming or the other industrial vocations.

A party of gentlemen may agree to visit foreign countries, and, by using the proper means, execute their purpose. On returning they may state, without vanity or egotism, that they had procured valuable articles which were the only ones of the sort in this country. It is in exactly this and no other spirit that, in speaking of the progress made in developing the policy adopted by the Board in 1873, we claim that Kansas has an Agricultural College which differs radically and advantageously from all other institutions in the United States; that it furnishes a mental education having less superfluous bosh and possessing more real value to the boys and girls who will have to make a living by working than can be obtained elsewhere; that it affords a mental discipline equal to that of any other institution; and that it gives a manual training which cannot be found elsewhere.

INDUSTRIAL EDUCATION.

The real value of an education to the student depends upon two things: First, the practical worth of the knowledge taught; and, second, the degree in which he makes it his own. Hence, the ability of any institution to give a practical education depends upon the kind and aim of the knowledge it teaches, and upon the thoroughness of the instruction therein.

The State Agricultural College was directly endowed by Con-

gress, and is guided by the State, for the specific purpose of furnishing to the industrial classes of Kansas a "practical" education, that is, "one fit for use." As its name indicates, and as the statistics of the industries of the State require, its chief work must be that of giving a useful and usable education to those who will engage in farming; and, therefore, the Farmer's Course must, from the nature of the case, be its main one.

FARMER'S EDUCATION.

Words and figures are merely instruments with which to record ideas. They are not themselves ideas, nor should they be made the chief end of an education. As a wagon is necessary to haul grain, so are they a necessary part of education; but as the wagon is not the grain, so they are not the knowledge which the farmer converts into money. Hence the classics and higher mathematics are not taught. But it will be noticed in the following course that so soon as the pupil acquires working skill in the use of the English language as a tool, and of figures and lines as mathematical tools, those arts and sciences which present knowledge that has a cash value to the farmer are taught as rapidly as their importance and thorough acquisition will permit. Studies numbered (1) and (4) in the second, third and fourth years are the spine of the course, to which the others are as ribs and muscle. Explanatory details will be found on subsequent pages:

FARMER'S COURSE.

FIRST YEAR.

FALL TERM.

1. Drill in English.
2. Drill in Arithmetic.
3. Industrial Drawing.

SPRING TERM.

4. English Structure.
5. Adv'd Arithmetic, Book-keeping.
6. U. S. History, Industrial Drawing.

SECOND YEAR.

FALL TERM.

1. Physiology.
2. Rhetoric.
3. Algebra.

SPRING TERM.

4. Practical Agriculture (elementary).
5. Physics.
6. Industrial Drawing.

THIRD YEAR.

FALL TERM.

1. Botany, Entomology.
2. Inorganic Chemistry.
3. Practical Geometry.

SPRING TERM.

4. Prac. Horticul., Landscape Gard'ng.
5. Organic and Analytical Chemistry.
6. Practical Surveying.

FOURTH YEAR.

FALL TERM.

1. Practical Agriculture (advanced).
2. Geology, Mineralogy.
3. Political Economy, Practical Law.

SPRING TERM.

4. Zoology.
5. Agricult'l Chemistry, Meteorology.
6. Logic.

WOMAN'S EDUCATION.

Nearly one-half of our students are females, and the Woman's Course is prepared expressly for their liberal and practical education. We have no doubt whatever that practical men and women, who understand what it means and what it seeks to do, will fully endorse it. For details see synopsis given by the several departments:

W O M A N ' S C O U R S E .

FIRST YEAR.

FALL TERM.

1. Drill in English.
2. Drill in Arithmetic.
3. Industrial Drawing.

SPRING TERM.

4. English Structure.
5. Adv'd Arithmetic, Book-keeping.
6. U. S. History, Industrial Drawing.

SECOND YEAR.

FALL TERM.

1. Physiology.
2. Rhetoric.
3. Algebra.

SPRING TERM.

4. English Literature.
5. Physics.
6. Industrial Drawing.

THIRD YEAR.

FALL TERM.

1. Botany, Entomology.
2. Inorganic Chemistry.
3. Industrial Drawing.

SPRING TERM.

4. Prac. Horticul., Landscape Gard'ng.
5. Organic and Household Chemistry.
6. Household Economy.

FOURTH YEAR.

FALL TERM.

1. Farm Economy, Special Hygiene.
2. Geology, Mineralogy.
3. Political Economy, Practical Law.

SPRING TERM.

4. Zoology.
5. Physical Geography, Meteorology.
6. Logic.

MECHANIC'S EDUCATION.

The number of students received during our day who have really purposed to become mechanics, and, therefore, who were justly entitled to a special course preparatory thereto, has been relatively very small. In view of this fact, and of the present resources of the Institution, together with the adaptedness of the leading course to the wants of the intelligent mechanic, it has been found practically unnecessary to diverge from the Farmer's Course. Additional studies, specially adapted to the mechanic's use will be furnished in a Post-Graduate's Course. But the above course as it stands, and in the order of its standing, will be followed by all male students.

If it be urged that the distinctively agricultural knowledge taught in the Farmer's Course is not directly valuable to the mechanic, we reply that, admitting the point for the purpose of argument, yet: 1. This knowledge is of more practical value to

the mechanic than is the Latin, Greek, or a half dozen other things embraced in the usual course preparatory to the professions; 2. That the great majority of Kansas mechanics will also be more or less engaged in agriculture; 3. That those studies in the course which are directly valuable to the mechanic, together with the shop facilities, offer a better mechanic's education than can be elsewhere found west of the Alleghanies.

INDUSTRIAL DEPARTMENTS.

Having knowledge in the head is one thing; ability to use it with the tongue, fingers or feet is quite another thing. Both are vital to success in practical life. A man might thoroughly understand the theoretical principles of carpentry, and yet, not having used the tools, be wholly unable to earn carpenter's wages. So in all other vocations. Accordingly, instruction is given in the following well-equipped Industrial Departments, and every student is required to recite in some one of them, as selected by the pupil or parent:

FOR MALE STUDENTS.

The Farm.
The Nursery.
Carpentry.
Cabinet-making.
Turning.
Wagon-making.
Painting.
Blacksmithing.

FOR FEMALE STUDENTS.

Dress-Making.
Printing.
Telegraphy.
Scroll-Sawing.
Carving.
Engraving.
Photography.
Instrumental Music.

Each of these departments is conducted exactly as in daily life, and aims to give precisely the drill received by an apprentice. No charge is made, either for tuition or material, from male students taking the Industrials provided for them; nor from female students taking the ones provided for them, except in the Department of Instrumental Music, where the usual fee is assessed for the use of pianos or organs. Male students taking either Printing or Telegraphy are charged \$1 per month for the use of material and instruments.

DEPARTMENTS OF INSTRUCTION.

PRACTICAL AGRICULTURE.

Second Year: General principles of breeding; history and characteristics of breeds; adaptation of different breeds for special purposes and localities; implements of simple tillage;

mechanical principles involved in their construction ; action of the plow upon soil and subsoil ; principles of draught ; influence of different adjustments upon draught ; use of the dynamometer ; value of hoed crops in a system of husbandry ; the cultivation of corn and roots ; soils that need drainage ; how to lay out a system of drains ; house drainage ; sewerage.

Fourth Year : General view of agriculture, ancient and modern ; agricultural progress of the last century ; relative advantages of mixed husbandry and special farming ; the selection and arrangement of the farm with reference to the system to be pursued ; rotation of crops ; general advantages of a rotation ; the best rotation with reference to disposition of labor, production of manure, and extermination of weeds ; pasturage and production of grain and forage crops ; manures, how best housed and applied ; composting manures ; commercial fertilizers ; systems of feeding ; stall feeding ; steaming food ; soiling ; experiments in feeding ; farm buildings ; farm houses ; barns.

FARM ECONOMY.

Woman's Course, Fourth Year : Dairy products as human food ; influences affecting character of milk ; manufacture of condensed milk ; the factory system and household plan of cheese-making ; treatment of rennet ; general process of cheese manufacture ; subsequent treatment of cheese ; butter-making ; creameries ; "deep" and "shallow" setting systems ; general process of butter-making ; packing and preserving butter.

BOTANY AND PRACTICAL HORTICULTURE.

This department embraces a course of instruction in the elements of botany, structural and systematic, with a constant attention to the practical application of botany to the farm, orchard, garden, nursery and forest ; also a course of lectures on Landscape Gardening. The instruction is mainly given by lectures, accompanied by regular practical drill in all the work of the fruit, vegetable and flower gardens, nursery, orchard, vineyard and ornamental grounds.

The lectures in Practical Horticulture embrace the following and kindred subjects : The relation of atmospheric motion, moisture and temperature to horticulture ; seeds, the means of collecting and preserving ; propagation, by seeds, cuttings, layers, suckers, grafting, budding ; care of young plants ; improvement

of varieties; management of commercial and farm nursery; modes of pruning; the orchard; fruit suitable for orchard and garden culture; the flower, vegetable and fruit garden; importance and mode of forest culture; shelter belts and their influence; weeds and useful plants; noting the species of trees worthy of culture, either for profit or ornament.

The lectures on Landscape Gardening not only unfold the accepted principles of the art, but at the same time give special attention to such applications of the art as may be made universally available in the laying out and improvement of farms and the homes of the people. These lectures are accompanied by a practical drill in the work of laying out and plotting grounds topographically.

CHEMICAL DEPARTMENT.

PHYSICS.

This includes a full consideration of the laws of mechanics, of liquids, gases and vapors, weights and measures, and specific gravity, followed by experimental study in the Physical Laboratory of the laws of heat, light, with spectrum analysis, electricity and magnetism, and the relation of these forces to plant and animal life. Text-book, Ganot.

INORGANIC CHEMISTRY.

This course is opened with a careful study of chemical forces and of the laws governing chemical combination. The elements, with their compounds, are next considered in succession as to their history, properties, manufacture, and especially with regard to their uses on the farm and in the arts. These lectures are accompanied by an extended course of laboratory practice in which each student performs every experiment with his own hands. Text-book, Eliot & Storer.

ORGANIC CHEMISTRY.

This comprises a thorough study of the chemistry of organic compounds, the composition of plants and of the various compounds derived from them. Constantly accompanied by laboratory practice.

CHEMICAL ANALYSIS.

In this course each student is furnished his stand in the Qualitative Laboratory, completely furnished with apparatus

and chemicals for his own use. He here performs analyses of farm soils, plant ash, commercial manures, ores, mineral waters, commercial compounds, etc. After completing this course, he then enters, if he desires, the Quantitative Laboratory, where he pursues a full course in quantitative analysis. Text-book, Kedzie's Manual.

AGRICULTURAL CHEMISTRY.

This includes a thorough consideration of the application of chemical principles to the economy of the farm; the origin and formation of soils; the classification and composition of soils; the analysis of soils and their adaptation to purposes of production; the composition and uses of manures; composting; chemistry of farm operations, such as plowing, fallowing, draining, etc. Text-book, Johnson's "How Crops Feed."

METEOROLOGY.

Embracing the composition of the atmosphere; atmospheric pressure; temperature and humidity; laws of storms; rain, snow and atmospheric electricity. A full course in meteorological observations is taken under direction of the Signal Service. Text-book, Loomis' Meteorology.

MINERALOGY.

This includes the study of the laws of crystallography, with the properties, forms and uses of the principal minerals of the United States. Blow-pipe analysis forms a very important part of the course, each student being required to name and identify a large series of minerals. Text-book, Dana's Mineralogy.

HOUSEHOLD CHEMISTRY.

A course of lectures upon this subject is yearly delivered to a class of young ladies. The course embraces the chemistry of cooking; the composition of food; bread; tea, chocolate and coffee; butter and milk; ripening and preservation of fruits, etc.

SPECIAL COURSES

Are constantly in progress in Assaying, Pharmaceutical Chemistry and Photography.

ENGLISH LANGUAGE.

Words are simply tools used to express ideas; and, since the vast majority of our communications are made by the employment of spoken or written words, skill in using them is as profit-

able to the industrialist as is dexterity with the needle profitable to the seamstress. The direct aim of the course is to make the student skillful and intelligent in handling the machinery called language, just as an engineer handles a locomotive; and no drill will be omitted, or effort spared, to gain this end. Apart from the course itself, which is far more practical and complete than that usually found in literary colleges, the constant attention given this subject by all the departments, and especially the practice required in the printing classes, affords superior advantages to the student.

DRILL IN ENGLISH.

"As grammar was made after language, so ought it to be taught after language."—HERBERT SPENCER.

Drill in English embraces the following topics:

Sounds of the language; drill in producing the vocal, sub-vocal and aspirate elements with accuracy, distinctness and volume; vowels, consonants.

Letters: Form; power; rules for spelling, drill.

Words: Signification, properties, modifications, variations, relation and dependence.

Sentences: Drill in statement of ideas; description, clearness, terseness, vigor; business letters, discussion; capitalization; syllabication; punctuation; construction and analysis of sentences; elements, uses and names; criticism of compositions printed as written; proof reading; grammatical construction; superfluous words and clauses; drill in reading, speaking and penmanship.

Text-Books: Webster's Academic Dictionary; Lee and Hadley's Advanced Lessons in Language.

Pupils deficient in spelling, etc., should enter the printing class, the printing-office being the work-shop of language.

STRUCTURE OF ENGLISH.

ELEMENTS OF WORDS.—The end aimed at in this study is to learn everything about words which will aid in their effective use. Among the topics included are:

Roots: What they are; their origin; their force and value as an element of language; the manner of their growth into different parts of speech.

Stems: Their derivation; their offices and properties; their relations to the other parts of words.

Prefixes and Suffixes: The several sources whence derived;

- the relation of their force or significance to those sources ; explanation of the laws and principles governing their use along with stems.

Compounds : Their value ; their properties and uses ; the laws governing their formation.

Synonyms : Definitions ; causes of their abundance in English ; the principles to be observed in choosing among them, to express a thought.

Criticism : This constitutes a prominent part of the exercises of the pupil through his whole course in the study of English. It not only diversifies and enlivens the class-room exercises, but reduces to practice the principles of the structure of the language. By this means, the student acquires not only a knowledge of English, but readiness, skill and accuracy in speaking or writing it. The exercises in criticism embrace not only examination of selected matter, but original composition.

ELEMENTS OF SENTENCES.—The purpose in view in studying this subject is not to traverse the ground gone over in the study of grammar, but to fix in the mind of the student a clear understanding and remembrance of names, the properties and offices of the several classes of words entering into an English sentence, by showing him the reason of things ; to make more simple, as well as interesting and practically useful, a study otherwise “dry and unprofitable” in many cases, by explaining the reason of the verbal forms and changes, the rules and maxims he is to remember and observe in his use of language. In the same manner he is conducted through a study of the mutual relations and dependencies of the several elements making up a sentence.

MATHEMATICS.

Figures and lines, like words, are only instruments with which to convey ideas, or perform operations, that cannot be easily done without them. The arithmetical principles used in business are few and simple ; but accuracy and rapidity in computation are only gained by practice. College graduates often fail to retain clerkships, not because they do not know *why* given operations are performed, but because they can neither add, multiply nor divide with that habitual correctness which renders their work reliable.

DRILL IN ARITHMETIC.

The chief design of this study is to make the student expert in the use of numbers, as employed by the industrialist for profit. The occupation of a successful farmer demands the application of every principle of practical arithmetic, and is taken as a starting point, rather than that of an abstract system. Beginning with a simple cash account, book-keeping is gradually developed to the full extent of its real utility. The areas of fields, expense of crops, construction of houses, sales of produce, and investment of capital, involve all the fundamental operations, and those of profit and loss, commission, taxes, insurance, exchange and stocks. Following this line, the student, so far from hammering away at "pure" science, draws from the mathematical store-house what he needs, and sees why he needs it. Accuracy of calculation and posting, rather than a mere comprehension of the principles, is aimed at. Besides the recitation-room drill in business forms, practice in the field is also given. Estimating the number of cords in a pile of wood said to be 100x4x4 feet is one thing; measuring a pile of wood, through which any number of cats may be harmlessly thrown, and in which four feet sticks are the exception, is quite another and more difficult thing.

ARITHMETIC AND BOOK-KEEPING

Is a continuation of the above, having the same purpose and adopting such methods as the necessities of the class indicate. Thorough instruction in the principles and forms of business law is given. It will be seen that this method of teaching book-keeping, besides ensuring arithmetical practice, develops practical skill in that important art.

ALGEBRA.

Algebra is included in the course as a preparation for the study of Surveying.

DRAWING.

The practical value of Industrial Drawing can hardly be over-estimated, first, because its study is the best drill for the development of the perceptive faculties, which are the ones most employed in daily life; and, second, because the working classes make a far greater use of lines than they do of figures. A farmer follows a line when laying a straight furrow; the car-

penter uses the square and rule twenty times as often as he does figures; and a woman in cutting a pattern, or deciding that one bonnet is prettier than another, does so by the line or "form." So that either in its direct application, or in the exercise of that taste which comes from skill in using lines, this branch of mathematics is quite as important as a means of "mental discipline" as is the branch of computation, and is of far greater daily use. The admirable system of Prof. Walter Smith, Art Director of Massachusetts, is thoroughly followed through the grades of Free-hand, Geometrical, Object, Model, Perspective, Mechanical, and Topographical Drawing, during the terms indicated by the Course of Study. In addition, constant practice in the application of lines to metal and wood is furnished in the Blacksmith, Carpenter, Turning, Scroll-sawing, Carving, Engraving and Printing shops, and to fabrics in the Sewing Department.

PRACTICAL GEOMETRY.

Not one farmer in a thousand ever uses the transit in surveying his land, the testimony of the county surveyor being decisive in court; but every farmer makes countless applications of lines and angles in laying off fields, roads, gardens, planning houses, determining levels, etc. The object of Practical Geometry is to teach the properties and uses of angles, and to make the student skillful in the application of lines to the field by the use of such simple instruments as are always within reach, or within his ability to construct; and accurate in the transferring of plans to the grounds, board, or block.

PRACTICAL SURVEYING.

The drill in the use of figures and lines given by the mathematical course as above indicated renders the mastery of surveying an easy task. There is no calculation made or formula used by the working engineer which cannot be readily understood and performed by a skillful arithmetician after proper instruction. The hand-book of the engineer is accordingly supplemented with such special guidance as is found necessary for a full comprehension of the mathematical principles and their applications; and extended field practice is required in the use of the compass, level, transit and theodolite.

STUDIES SPECIAL TO WOMAN.

Besides the studies already indicated, attention is called to the following :

SPECIAL HYGIENE.

As shown in the course, one term is devoted to the study of Physiology, from the text-book of Dr. J. C. Dalton. This is followed in the fourth year by a course of lectures to young ladies by Mrs. Cripps on the subject of Hygiene, embracing such applications of physiological truths and such instruction in hygienic matters as are valuable to woman.

FARM ECONOMY considers those affairs of the farm which usually come under the supervision of the farmer's wife or daughter, and which are not included in "gardening" or "household economy;" such as butter and cheese-making, dairy management, etc. A course of lectures is delivered by the Professor of Practical Agriculture. See page 8.

GARDENING is included in Practical Horticulture. See page 9.

HOUSEHOLD CHEMISTRY. See Chemical Department, page 10.

HOUSEHOLD ECONOMY

Follows Household Chemistry and consists of lectures by Mrs. Cripps in the art of house-keeping, embracing cookery, domestic management, and kindred topics. Many elderly gentlemen sufficiently know, and more young gentlemen will duly discover, that systematic knowledge of how cooking ought to be done is luminously different from the ability to do it.* Instruction without practice can effect but little. Accordingly, a kitchen laboratory has been completely furnished, and affords every facility for drill in the art of cooking. This drill chiefly differs from that of a kitchen in the respect that after a girl has learned to wash dishes or pare potatoes she is not kept everlastingly at either. After full trial we have found it just as feasible to give this practice, with profit and pleasure to the pupil, as it is to give laboratory practice in chemistry — and no more expensive.

*There can hardly be a better illustration of the practical difference between "science" and "art," or one which flashes through humanity with greater vividity! If the happiness of men depended as much upon the efficiency of agencies for the "mental discipline" and "culture" of women as it does upon their housewifely ability, the owlism would have been punched out of a score of very respectable studies long ago.— J. A. A.

GENERAL INFORMATION.

BUILDINGS.

OLD COLLEGE BUILDING.—Stone, three stories, 40x60, nine rooms, used for library, cabinet and dormitories. One mile distant from following:

COLLEGE BUILDING.—Stone, 42x100, two stories, containing chapel and ten recitation rooms. It was designed for a barn, but is now used by the Literary Departments.

LABORATORY.—Cross form, 109x109, one story, stone, containing a lecture room, office, balance room and four large laboratories.

HORTICULTURAL BUILDING.—Stone, one story and basement, 31x80, five rooms for recitations, work-shop, etc.

MECHANICAL BUILDING.—Stone, 38x102, two stories, seven rooms, containing Wood Shops, Printing, Telegraph, Sewing, and Instrumental Music Departments.

BARN.—Stone, one story and basement, 46x96, furnishing accommodations for forty head of cattle and eight horses, with granaries, harness room, etc.

BLACKSMITH SHOP.—Wood, 20x40; two forges.

ILLUSTRATIVE APPARATUS.

A FARM of 185 acres, thoroughly equipped and cultivated. Short-horn, Devon, Jersey and Galloway cattle; Berkshire and Essex swine; etc., etc.

A NURSERY of 30 acres, thoroughly equipped and stocked with experimental apple, pear and peach orchards, vineyard, small fruits, etc.

THE CHEMICAL DEPARTMENT, with its new Laboratory and appliances, is practically equal to any in the United States.

THE MECHANICAL DEPARTMENT has twenty-five kits of carpenter's tools; lathes, scroll-saws, etc.; and a well furnished blacksmith shop.

THE SEWING DEPARTMENT is well equipped with machines and appliances.

THE MATHEMATICAL DEPARTMENT is supplied with the appliances necessary for study and practice in surveying.

THE PRINTING DEPARTMENT has twenty-six pairs of cases; presses, etc.

THE TELEGRAPH DEPARTMENT has four miles of line, twenty-five instruments, and every facility for practical instruction.

TERMS OF ADMISSION.

Candidates for admission must be fourteen years of age, and pass a satisfactory examination in reading; arithmetic, through decimal fractions; English grammar, to syntax. Classes are started at the beginning of each year in Drill in Arithmetic and Drill in English; and the pupil must have the knowledge above indicated, else he will be unable to retain position if admitted.

Pupils will be received at any time during the year, if able to pass an additional examination upon the subjects studied by the classes which they expect to enter. But they will find it very greatly to their advantage to be present at the opening of each term, or as soon thereafter as possible.

GRADES.

Both the Literary and Industrial recitations are graded daily upon a scale of 100; and an examination of all classes is made at the close of each month. A student not attaining an average grade of sixty is promptly dropped to a lower class, or excluded from the Institution until able to do so. The work of grading is strict and uniform in all the departments, and this process is rigorously used for sifting out incompetent and indolent pupils; thus more than accomplishing all that is designed to be effected by a "high standard of admission." Hence, the student's continuance in the College wholly depends upon his own action.

The course is based upon the determination to make the labor required in the preparation of one industrial and of three literary recitations as much as the average student can healthfully perform, in ten hours a day. We design to give the pupil the worth of the time expended at College; and, in order thereto, he must do a full day's real work with brain or hand. Only those students who can maintain a standing of ninety in each study will be allowed to take more than the prescribed number of recitations; and no one will be permitted to have less than one industrial and three literary recitations.

RELIGIOUS.

Unless otherwise directed by parents, students are required to attend chapel at 8:30 A. M., on academic days, and divine service once every Sabbath.

EXPENSES.

Except as above noted, there are no charges whatever for attendance, either in the shape of tuition or contingent fees. Furnishing an absolutely free education is as much as can be reasonably asked; and the Institution neither boards, clothes, nor supplies the student with text-books. Boarding can be obtained in private families at from \$3 to \$4 per week. Washing costs from seventy-five cents to one dollar per dozen. Text-books, which can be procured in Manhattan, cost from \$2.50 to \$5 per term.

No student need expend over \$5 or \$5.50 per week; and many of our best men are living at from \$2 to \$4 per week. Students desiring to "board themselves" can do so at from \$1.25 to \$2 per week. In a club of four young men, renting a house, the average cost to each for the term was \$1.11 per week.

LABOR.

Manual labor by the students may be for either of two purposes: First, to acquire skill in a given art; second, to earn money. In the first case, the labor is educational; in the second, it should be paid for by the party benefited.

EDUCATIONAL LABOR.—Manual labor in the recitations of the Industrial Departments, like mental labor in those of the Literary Departments, is purely educational and will not be remunerated. While the interest of the student will be held paramount in the direction of this labor, the practice necessary to dexterity will be required.

REMUNERATED LABOR.—When the Institution needs labor on the Farm or elsewhere which is not educational, but simply for its own profit, and which a student is able and willing to perform, it becomes an employer instead of a teacher, and he an employe instead of a scholar. It pays for work; he works for pay. The relation between them is commercial, not educational; and both parties must act upon business principles. Hence, the College will only furnish such employment as its own interests require, and will pay according to the value of the service rendered at from seven to ten cents an hour.

AMOUNT EARNED.

It is impossible to say how much any one can earn, since that depends upon what the student can do and what work there is to be done. Some are making one-half their expenses, some the whole, and exceptional men have made more than expenses. As a rule, a faithful boy skilled in farm work can earn half his expenses by entering the Labor Class of Practical Agriculture. During the year he can ordinarily acquire sufficient skill in the wood or iron shops to enable him to make articles for sale. The whole question is one for his own consideration and decision; and he should not be too sanguine. We can teach all who come, but it is impossible for us to *promise* anything more. Hitherto we have refrained from holding out strong inducements respecting the amount of labor we might have to offer; but in view of the fact that during the last three years we have had more to do than the students could perform, we are inclined to give greater encouragement on this point. Any boy who is in dead earnest, who is familiar with farm operations, and who can raise \$50 to start with, should be able to carry himself through the four years' course.

RULES.

1. Behave as a true man or woman should, at all times and in all places.
2. Attend to your own business promptly, thoroughly and courteously; and vigorously let alone that of other people.
3. Penalty: "Leave!"

CALENDAR.

FALL TERM 1877.—Begins Thursday, August 23d, and closes Thursday, December 20th.

SPRING TERM 1878.—Begins Thursday, January 3d, and will close Wednesday, May 22d.

PUBLICATIONS.

The "HAND-BOOK," published in 1874, containing a full discussion of the educational question and the aims of the Institution, will be forwarded to any one desiring it.

THE INDUSTRIALIST, a weekly journal edited by the Faculty and published by the Printing Department, contains original and seasonable articles on the Farm, Orchard, Trades, Sciences, and Education. Price, 75 cents a year. Address, A. A. Stewart, Manhattan.

LIST OF STUDENTS

ENROLLED FROM

JANUARY 7th, 1875, to MAY 23d, 1877.

NAME.	POST-OFFICE.	COUNTY.
Abbott, Frank C.....	Manhattan.....	Riley.
Adams, Emma L.....	Manhattan.....	Riley.
Allen, Edwin R.....	Toledo.....	Chase.
Anderson, Bernhard.....	Lindsburg.....	McPherson.
Arnold, Joseph F.....	Columbus.....	Indiana.
Bailey, William E.....	Lyndon.....	Osage.
Bayles, John.....	Manhattan.....	Riley.
Beals, Sarah F.....	Toledo.....	Chase.
Beamer, David A.....	Netawaka.....	Jackson.
Beck, John W.....	Manhattan.....	Riley.
Beckwith, Anson.....	Washington.....	Washington.
Beckwith, Weldon E.....	Wabaunsee.....	Wabaunsee.
Bell, Franklin P.....	Towanda.....	Butler.
Benedict, Flora.....	Vienna.....	Pottawatomie.
Benjamin, Daniel A.....	Effingham.....	Atchison.
Benjamin, Emery W.....	Effingham.....	Atchison.
Bissell, Edgar.....	Phillipsburg.....	Phillips.
Blain, Arthur T.....	Manhattan.....	Riley.
Blanc, John H.....	Strawn.....	Coffey.
Bletcher, Frederick A.....	Reedville.....	Marshall.
Boies, Frank.....	Valley Falls.....	Jefferson.
Boley, Mary B.....	Manhattan.....	Riley.
Brady, Louis R.....	Manhattan.....	Riley.
Branson, Martin H.....	Eureka.....	Greenwood.
Branson, Samuel F.....	Eureka.....	Greenwood.
Briggs, Harry.....	Manhattan.....	Riley.
Brous, Frank D.....	Manhattan.....	Riley.
Brous, Wilber.....	Manhattan.....	Riley.
Brown, Ada E.....	Manhattan.....	Riley.
Brown, Cortez.....	Round Grove.....	Washington.

NAME.	POST-OFFICE.	COUNTY.
Brown, Mark L.....	Manhattan.....	Riley.
Browning, Alice.....	Manhattan.....	Riley.
Browning, Emma E.....	Manhattan.....	Riley.
Browning, Lois.....	Manhattan.....	Riley.
Buell, C. Stewart.....	Binghamton.....	New York.
Buell, Delight A.....	Binghamton.....	New York.
Buel, George K.....	Wabaunsee.....	Wabaunsee.
Buell, Walter A.....	Binghamton.....	New York.
Buel, Warren C.....	Pavilion.....	Wabaunsee.
Burnham, William P.....	Fort Bayard.....	New Mexico.
Burroughs, Arlettie J.....	Manhattan.....	Riley.
Burroughs, Frank C.....	Manhattan.....	Riley.
Caldwell, Thomas J.....	Carlyle.....	Allen.
Campbell, Emma.....	Manhattan.....	Riley.
Campbell, Ettie A.....	Manhattan.....	Riley.
Campbell, Fannie A.....	Manhattan.....	Riley.
Campbell, Flora A.....	Circleville.....	Jackson.
Campbell, Florence A.....	Manhattan.....	Riley.
Campbell, May.....	Manhattan.....	Riley.
Campbell, William A.....	Manhattan.....	Riley.
Campdoras, Leon S.....	North Topeka.....	Shawnee.
Cannon, William R.....	Carlyle.....	Allen.
Carpenter, Mattie A.....	Topeka.....	Shawnee.
Chamberlain, Willis P.....	Manhattan.....	Riley.
Child, Ella S.....	Manhattan.....	Riley.
Clark, Anna C.....	Manhattan.....	Riley.
Coffey, Winnie.....	Manhattan.....	Riley.
Cole, Fannie I.....	Manhattan.....	Riley.
Conroy, Emma.....	Manhattan.....	Riley.
Copley, Albert.....	Perry.....	Jefferson.
Copley, John T.....	Perry.....	Jefferson.
Cotton, Fred L.....	Wabaunsee.....	Wabaunsee.
Cotton, Kate H.....	Wabaunsee.....	Wabaunsee.
Cox, George A.....	Junction City.....	Davis.
Cox, Lizzie R.....	Junction City.....	Davis.
Craig, Addie J.....	Manhattan.....	Riley.
Craig, Sarah.....	Manhattan.....	Riley.
Cripps, Edward V.....	Lyndon.....	Osage.
Crouse, Clay C.....	Oswego.....	Labette.
Crowl, Florence.....	St. George.....	Pottawatomie.
Crowl, Jessie C.....	St. George.....	Pottawatomie.
Damon, Rosa M.....	Manhattan.....	Riley.
Davidson, George K.....	Fort Sill.....	Indian Territory.
Davidson, William B.....	Fort Sill.....	Indian Territory.
DeForest, Rodman A.....	Wetmore.....	Nemaha.

NAME.	POST-OFFICE.	COUNTY.
Degraw, Ettie U.....	Vienna.....	Pottawatomie.
Delahay, Charles.....	Leavenworth.....	Leavenworth.
Dellinger, John F.....	La Cygne.....	Linn.
Dow, Charles A.....	Hartford.....	Lyon.
Dunbar, Lottie R.....	Topeka.....	Shawnee.
Dutcher, A. J.....	Manhattan.....	Riley.
Dutcher, Matie.....	Manhattan.....	Riley.
Eckman, Emma F.....	Osborne City.....	Osborne.
Eckman, Wilmer K.....	Osborne City.....	Osborne.
Bells, Allan B.....	Manhattan.....	Riley.
Bells, Hattie M.....	Manhattan.....	Riley.
Elliot, Willard S.....	Manhattan.....	Riley.
Ellsworth, Miles.....	Effingham.....	Atchison.
Emmons, George E.....	St. George.....	Pottawatomie.
Emmons, Joseph N.....	St. George.....	Pottawatomie.
Engle, Charles E.....	Manhattan.....	Riley.
Engle, Laura.....	Manhattan.....	Riley.
Ensign, Ellen J.....	Pavilion.....	Wabaunsee.
Ensign, Francis.....	Pavilion.....	Wabaunsee.
Ernst, William.....	Emporia.....	Lyon.
Esdon, Maggie.....	Manhattan.....	Riley.
Evans, Esther E.....	Plainfield.....	Illinois.
Everhart, Logan.....	Parsons.....	Labette.
Failyer, George H.....	Columbus.....	Cherokee.
Failyer, Mariam.....	Columbus.....	Cherokee.
Failyer, Miriam.....	Columbus.....	Cherokee.
Fawley, Abram.....	Milford.....	Davis.
Fay, Charles W.....	Ogden.....	Riley.
Fields, William H.....	Manhattan.....	Riley.
Flack, Annie C.....	Enterprise.....	Dickinson.
Flack, John B.....	Enterprise.....	Dickinson.
Fletcher, Clinton.....	New Cambria.....	Missouri.
Fletcher, Ellen.....	Manhattan.....	Riley.
Fletcher, Hannah.....	Manhattan.....	Riley.
Foster, Walter E.....	Osborne City.....	Osborne.
Fraunberg, William S.....	Chetopa.....	Labette.
Freligh, John H.....	Columbus.....	Cherokee.
Frizzell, Edwin C.....	Topeka.....	Shawnee.
Frizzell, Ruric N.....	Topeka.....	Shawnee.
Fuller, A. P.....	Ottawa.....	Franklin.
Fuller, Lewis F.....	America City.....	Nemaha.
Gale, Ella.....	Manhattan.....	Riley.
Gale, George A.....	Manhattan.....	Riley.
Garrett, Nina.....	Wyandotte.....	Wyandotte.
Gibbon, John W.....	Burlington.....	Coffey.

NAME.	POST-OFFICE.	COUNTY.
Gifford, Frank.....	Milford.....	Davis.
Gillett, Charles.....	Savannah.....	Pottawatomie.
Gist, Joseph.....	Manhattan.....	Riley.
Gist, John.....	Sabetha.....	Brown.
Gist, Owen.....	Sabetha.....	Brown.
Glossop, Lydia.....	Manhattan.....	Riley.
Godfrey, Albert N.....	Madison.....	Greenwood.
Gregg, Mollie B.....	Manhattan.....	Riley.
Gregory, Wesley C.....	Lyndon.....	Osage.
Griffing, John S.....	Manhattan.....	Riley.
Gross, George M.....	Junction City.....	Davis.
Griffing, William J.....	Manhattan.....	Riley.
Grover, Ella.....	Savannah.....	Pottawatomie.
Grover, Mary A.....	Savannah.....	Pottawatomie.
Grover, Mortimer C.....	America City.....	Nemaha.
Haines, H. F.....	Manhattan.....	Riley.
Haman, Frank.....	Manhattan.....	Riley.
Harding, Louis A.....	Manhattan.....	Pottawatomie.
Harding, Rowanna.....	Manhattan.....	Pottawatomie.
Harding, Rowena.....	Manhattan.....	Pottawatomie.
Harding, Thomas A.....	Manhattan.....	Pottawatomie.
Harmon, Webster.....	Valley Falls.....	Jefferson.
Harper, Josephine C.....	Manhattan.....	Riley.
Harris, Charles S.....	Ottawa.....	Franklin.
Harvey, Henry J.....	Wichita.....	Sedgwick.
Haun, John E.....	Sedgwick.....	Harvey.
Hayes, Burt.....	Binghamton.....	New York.
Haynes, David.....	Manhattan.....	Riley.
Hennings, Clarence H.....	New York City.....	New York.
Hibbard, Alice.....	Manhattan.....	Riley.
Hickey, Pierce.....	Marysville.....	Marshall.
Hicks, John H.....	Concordia.....	Cloud.
Hiddleston, Frank W.....	Solomon Rapids.....	Mitchell.
Higinbotham, Ettie F.....	Manhattan.....	Riley.
Higinbotham, George A.....	Manhattan.....	Riley.
Himes, Phebe.....	Manhattan.....	Riley.
Hixon, Columbus.....	Holton.....	Jackson.
Hixon, Samuel.....	Holton.....	Jackson.
Hodges, David.....	Strawn.....	Coffey.
Hodges, Samuel R.....	Strawn.....	Coffey.
Hopkins, Samuel D.....	Milford.....	Davis.
Houston, Charles S.....	Manhattan.....	Riley.
Houston, Hortense.....	Manhattan.....	Riley.
Houston, Lawrence N.....	Manhattan.....	Riley.
Houston, U. Grant.....	Manhattan.....	Riley.

NAME.	POST-OFFICE.	COUNTY.
Howard, Giles P.....	Manhattan.....	Riley.
Howard, Jasper.....	Manhattan.....	Riley.
Howard, Walter C.....	Manhattan.....	Riley.
Hoyt, Emma.....	Manhattan.....	Riley.
Hoyt, Frederick O.....	Hiawatha.....	Brown.
Hoyt, Kate O.....	Manhattan.....	Riley.
Hubble, Frank P.....	Holton.....	Jackson.
Hughes, Frank.....	Leavenworth.....	Leavenworth.
Hulett, Turner C.....	Edgerton.....	Johnson.
Huling, Orlando D.....	Columbus.....	Cherokee.
Hulse, Etta V.....	Manhattan.....	Riley.
Humphrey, Carrie E.....	Milford.....	Davis.
Humphrey, Louis E.....	Milford.....	Davis.
Humphrey, Merritt C.....	Milford.....	Davis.
Hurlburt, Alice.....	Emporia.....	Lyon.
Hurlbut, Jeannette.....	Oswego.....	Labette.
Huston, Charles.....	Junction City.....	Davis.
Ingraham, Florence.....	Manhattan.....	Riley.
Irish, Gertrude S.....	Manhattan.....	Riley.
Irish, Helen M.....	Manhattan.....	Riley.
Jameson, Anna.....	Manhattan.....	Riley.
Jameson, Mary C.....	Manhattan.....	Riley.
January, Charles.....	Bedford.....	Iowa.
Jaquith, Walter W.....	Milford.....	Davis.
Jarbeaux, Belle D.....	Hill Gove.....	Wallace.
Jeffrey, George A.....	Manhattan.....	Riley.
Jeffrey, William.....	Manhattan.....	Riley.
Jenkins, William H.....	Topeka.....	Shawnee.
Johnson, Charles A.....	Wamego.....	Pottawatomie.
Johnston, May.....	Clay Center.....	Clay.
Johnston, Nellie.....	Clay Center.....	Clay.
Jones, Carrie L.....	Wabaunsee.....	Wabaunsee.
Jones, Henry.....	Wabaunsee.....	Wabaunsee.
Jones, Horace.....	Wabaunsee.....	Wabaunsee.
Jones, Richard C.....	Kennekuk.....	Atchison.
Kay, James S.....	Oak Grove.....	Pottawatomie.
Kay, Jennie A.....	Oak Grove.....	Pottawatomie.
Keller, Milton W.....	Milford.....	Davis.
Keller, Virgil E.....	Milford.....	Davis.
Kershaw, Jarvis.....	Manhattan.....	Riley.
Kimball, Carrie.....	Manhattan.....	Riley.
Kimble, Martha.....	Manhattan.....	Riley.
Kimble, Mary A.....	Manhattan.....	Riley.
King, Carrie.....	Manhattan.....	Riley.
King, John.....	Marysville.....	Marshall.

NAME.	POST-OFFICE.	COUNTY.
Knapp, Frank.....	Osawatomie.....	Miami.
Knipe, George D.....	Manhattan.....	Riley.
Knipe, Lucy A.....	Manhattan.....	Riley.
Knipe, William A.....	Manhattan.....	Riley.
Knostman, Amelia.....	Manhattan.....	Riley.
Knostman, Emma.....	Manhattan.....	Riley.
Kroenke, Carl.....	Wamego.....	Pottawatomie.
Landon, Frank B.....	Vienna.....	Pottawatomie.
Lane, William J.....	La Cygne.....	Linn.
La Tourrette, James F.....	Fort Lyon.....	Colorado.
Leasure, Marion F.....	La Cygne.....	Linn.
Lewin, John.....	Wakefield.....	Clay.
Lewis, Eva M.....	Vienna.....	Pottawatomie.
Lewis, Ira H.....	Chetopa.....	Labette.
Little, Charles E.....	Emporia.....	Lyon.
Little, Hattie.....	Emporia.....	Lyon.
Lofinck, Reuben E.....	Manhattan.....	Riley.
Lynch, Frederick C.....	Columbus.....	Cherokee.
Lynch, James H.....	Columbus.....	Cherokee.
Mails, Charles.....	Manhattan.....	Pottawatomie.
Mails, Jennie E.....	Manhattan.....	Pottawatomie.
Maltby, James C.....	Salina.....	Saline.
Maltby, William.....	Salina.....	Saline.
Mann, John.....	Lyons.....	Rice.
Marlatt, Willie B.....	Manhattan.....	Riley.
Mathes, George W.....	Strawn.....	Coffey.
Maynard, Henry S.....	Osawatomie.....	Miami.
McCallum, Albert.....	Alida.....	Davis.
McCallum, Charles P.....	Alida.....	Davis.
McCallum, Daniel E.....	Alida.....	Davis.
McCallum, Hattie E.....	Alida.....	Davis.
McClanahan, S. L.....	Farlington.....	Crawford.
McConnell, Charles S.....	Manhattan.....	Riley.
McCormick, Henry H.....	Bramlette.....	Woodson.
McKanlass, William.....	Alida.....	Davis.
McKelvy, Robert.....	Washington.....	Washington.
McNair, Samuel E.....	Wabaunsee.....	Wabaunsee.
McNamee, John.....	Junction City.....	Davis.
McNamee, Mary F.....	Junction City.....	Davis.
McNamee, Michael.....	Junction City.....	Davis.
McQuary, J. Hollister.....	Salina.....	Saline.
Meacham, Mary A.....	Manhattan.....	Riley.
Meeker, Julian L.....	Ottawa.....	Franklin.
Metcalf, Holmes D.....	Ottawa.....	Franklin.
Merritt, Arthur H.....	Perry.....	Jefferson.

NAME.	POST-OFFICE.	COUNTY.
Midgley, Thomas.....	Minneapolis.....	Ottawa.
Miller, Frank E.....	Pike.....	New York.
Morgan, Samuel M.....	Americus.....	Lyon.
Moore, Cassie J.....	Auburn.....	Shawnee.
Morris, Mary E.....	Manhattan.....	Riley.
Moses, George C.....	Manhattan.....	Riley.
Neale, Cora A.....	Manhattan.....	Riley.
Nelson, John H.....	Bennington.....	Ottawa.
Noyes, Amelia.....	Wabaunsee.....	Wabaunsee.
Noyes, Ida L.....	Wabaunsee.....	Wabaunsee.
O'Leary, Alena.....	Abilene.....	Dickinson.
Oursler, Alphonso.....	Circleville.....	Jackson.
Parish, Effie A.....	Manhattan.....	Riley.
Parish, Ella A.....	Manhattan.....	Riley.
Parish, Emma.....	Manhattan.....	Riley.
Parker, Mary G.....	Manhattan.....	Riley.
Parkerson, Fannie R.....	Manhattan.....	Riley.
Parkerson, Freeman H.....	Manhattan.....	Riley.
Parsons, Mildred B.....	Kansas City.....	Missouri.
Patee, Henry.....	Manhattan.....	Riley.
Patton Jerry B.....	Wildwood.....	Rice.
Pechner, Lizzie.....	Manhattan.....	Riley.
Peck, Seward N.....	Junction City.....	Davis.
Peckham, William H.....	Manhattan.....	Riley.
Penry, Charles E.....	Hutchinson.....	Reno.
Perry, George H.....	Manhattan.....	Riley.
Pike, Frank H.....	Florence.....	Marion.
Pillsbury, Nellie.....	Manhattan.....	Riley.
Phillips, Anna.....	Manhattan.....	Riley.
Platt, Augustus H.....	Manhattan.....	Riley.
Platt, George L.....	Manhattan.....	Riley.
Platt, Hattie.....	Manhattan.....	Riley.
Pound, Byron.....	Manhattan.....	Riley.
Pound, Isabella B.....	Manhattan.....	Riley.
Powell, Omar.....	Vermillion.....	Marshall.
Powers, Herbert W.....	Manhattan.....	Riley.
Prentiss, Portus.....	Atchison.....	Atchison.
Proctor, Belle A.....	Twin Springs.....	Linn.
Proctor, John C.....	Twin Springs.....	Linn.
Puterbaugh, Hamlin F.....	Topeka.....	Shawnee.
Quinby, Frank B.....	Wakefield.....	Clay.
Rambo, Anna.....	Plymouth.....	Lyon.
Rambo, James W.....	Plymouth.....	Lyon.
Rathbun, Phebe.....	Manhattan.....	Riley.
Records, Francis A.....	Peru.....	Howard.

NAME.	POST-OFFICE.	COUNTY.
Redenbaugh, Lydia.....	Lyndon.....	Osage.
Reed, Almeda J.....	Milford.....	Davis.
Reed, Corwin J.....	St. Clere.....	Pottawatomie.
Reed, Nona.....	Topeka.....	Shawnee.
Reynolds, Theodore.....	Junction City.....	Davis.
Rhoades, Anna.....	St. George.....	Pottawatomie.
Richmond, Corydon S.....	Delano.....	Sedgwick.
Richmond, Gustavus A.....	Delano.....	Sedgwick.
Richmond, Irving.....	Delano.....	Sedgwick.
Riggs, Lewis E.....	Florence.....	Marion.
Riley, Lizzie.....	Manhattan.....	Riley.
Robertson, Mary J.....	Burr Oak.....	Jewell.
Rogers, Louis B.....	Solomon City.....	Dickinson.
Rogers, Julia F.....	Burlingame.....	Osage.
Rogers, Hope L.....	Solomon City.....	Dickinson.
Rogers, John W.....	Solomon City.....	Dickinson.
Romberger, Charles E.....	Manhattan.....	Riley.
Romick, James W.....	Solomon City.....	Dickinson.
Romick, Mary M.....	Manhattan.....	Riley.
Roper, Nida.....	Manhattan.....	Riley.
Ruland, Frank C.....	Augusta.....	Butler.
Rushmore, Harry C.....	Grantville.....	Jefferson.
Russell, Charles N.....	Tierra.....	New Mexico.
Salter, Lewis A.....	Thayer.....	Neosho.
Sanford, Lillie.....	Burlingame.....	Osage.
Sapp, Elwood.....	Thayer.....	Neosho.
Sawyer, Nellie.....	Ottawa.....	Franklin.
Schreiner, Ernst.....	La Grange.....	Marshall.
Schroeder, Charles E.....	Brooklyn.....	New York.
Schwalm, John.....	Burlington.....	Coffey.
Shaw, James.....	Manhattan.....	Riley.
Sherman, Marcus.....	Robinson.....	Brown.
Shiner, William Bee.....	Bexar.....	Texas.
Shinkle, Ezra.....	Twin Springs.....	Linn.
Shipman, Charles F.....	Elmdale.....	Chase.
Shofe, Ella B.....	Cottonwood Falls.....	Chase.
Shumaker, Simon C.....	Wetmore.....	Nemaha.
Sibrell, Hattie.....	Junction City.....	Davis.
Sikes, Melva E.....	Vienna.....	Pottawatomie.
Sikes, William H.....	Vienna.....	Pottawatomie.
Simpson, Emma.....	Manhattan.....	Riley.
Smith, Charles E.....	Manhattan.....	Riley.
Smith, Clement O.....	Emporia.....	Lyon.
Smith, Henry.....	Lyndon.....	Osage.
Smith, Leslie H.....	Plowboy.....	Shawnee.

NAME.	POST-OFFICE.	COUNTY.
Smith, Mary B.....	Centerville.....	Linn.
Snyder, Ella.....	Highland.....	Doniphan.
Snyder, Gussie.....	Highland.....	Doniphan.
Spooner, Matthew.....	Wakefield.....	Clay.
Sternberg, Albert.....	Fort Harker.....	Ellsworth.
Sternberg, Charles H.....	Fort Harker.....	Ellsworth.
Stewart, Albert A.....	Oswego.....	Labette.
Stewart, Alice E.....	Manhattan.....	Riley.
Stiles, Albert H.....	Pavilion.....	Wabaunsee.
Stockwell, Samuel H.....	Americus City.....	Nemaha.
Stone, Anna.....	Manhattan.....	Riley.
Stone, William S.....	Towanda.....	Butler.
Streeter, Abbie J.....	Bala.....	Riley.
Streeter, Charles A.....	Bala.....	Riley.
Thompson, Charles H.....	Alma.....	Wabaunsee.
Thompson, Ella.....	Irving.....	Marshall.
Thorpe, Hattie.....	Manhattan.....	Riley.
Thorpe, Jennie B.....	Manhattan.....	Riley.
Tittsworth, Wilbur H.....	Atchison.....	Atchison.
Todd, Irving.....	Manhattan.....	Riley.
Travelute, Charles F.....	Marysville.....	Marshall.
Ulrich, Corinna.....	Manhattan.....	Riley.
Ulrich, Edwin H.....	Manhattan.....	Riley.
Ulrich, William.....	Manhattan.....	Riley.
Veatch, Belle V.....	Manhattan.....	Riley.
Viets, Clayton L.....	Towanda.....	Butler.
Vincent, Ella.....	Manhattan.....	Riley.
Wake, George A.....	Wakefield.....	Clay.
Walker, James.....	Pleasant Run.....	Pottawatomie.
Ward, Stanley M.....	Ellenville.....	New York.
Warner, Cora.....	Ogden.....	Riley.
Warner, Nannie.....	Ogden.....	Riley.
Waters, Eben.....	Parsons.....	Labette.
Weeks, Abbie C.....	Irving.....	Marshall.
Weeks, Joseph.....	Phillipsburg.....	Phillips.
Wells, Arthur.....	Phillipsburg.....	Phillips.
Wells, Harvey A.....	Phillipsburg.....	Phillips.
Wertzberger, Anna.....	Alma.....	Wabaunsee.
White, Samuel A.....	Palermo.....	Doniphan.
Whitehorn, Arthur.....	Manhattan.....	Riley.
Whiting, Fairy E.....	Manhattan.....	Riley.
Whitman, Ida.....	Lyndon.....	Osage.
Whitman, Minerva E.....	Lyndon.....	Osage.
Whitney, Genevieve.....	Manhattan.....	Riley.
Whitney, George.....	Eudora.....	Douglas.

NAME.	POST-OFFICE.	COUNTY.
Whitney, Kittie S.....	Manhattan.....	Riley.
Whitney, Willard.....	Manhattan.....	Riley.
Whitted, Charles S.....	Lyndon.....	Osage.
Wilkin, Frank.....	Wichita.....	Sedgwick.
Willey, Ida.....	Columbus.....	Cherokee.
Williams, Cordelia.....	Topeka.....	Shawnee.
Williamson, Joseph E.....	Royal Center.....	Indiana.
Williamson, Lizzie.....	Royal Center.....	Indiana.
Williston, Carrie.....	Manhattan.....	Riley.
Williston, Frank H.....	Manhattan.....	Riley.
Wilson, Amos E.....	Solomon City.....	Dickinson.
Winder, Ivaloo.....	Strawberry.....	Washington.
Wingrove, Page.....	Clay Center.....	Clay.
Winne, Ella.....	Manhattan.....	Riley.
Winne, John.....	Manhattan.....	Riley.
Wisner, Albert.....	Manhattan.....	Riley.
Wisner, William.....	Manhattan.....	Riley.
Womack, Thomas J.....	Russell.....	Russell.
Wood, Adelbert D.....	Americus.....	Lyon.
Wood, Arlie.....	Parsons.....	Labette.
Wood, Clarence E.....	Pleasant Run.....	Pottawatomie.
Wood, Frank W.....	Valley Falls.....	Jefferson.
Woodman, Agnes M.....	Manhattan.....	Riley.
Woolam, Mamie.....	Wamego.....	Pottawatomie.
Wright, Robert.....	Dodge City.....	Ford.
Wyland, Thomas J.....	Jewell City.....	Jewell.
Wylie, Oliver.....	Tabor.....	Clay.
Young, Bettie.....	Manhattan.....	Riley.
Young, Willoughby.....	Junction City.....	Davis.

LIST OF GRADUATES.

Names.	1867.	Residence.
Denison, Henry L.....		Boulder City, Colorado.
Haines, Belle M.....		Topeka, Kansas.
Haines, Emma L.....		Wamego, Kansas.
Points, John J.....		Omaha, Nebraska.
White, Martha A.....		Chicago, Illinois.
1871.		
Campbell, Emily M.....		Concordia, Kansas.
Denison, Ellen F.....		Baldwin City, Kansas.
Houston, Luella M.....		Manhattan, Kansas.
Wheedon, Charles O.....		Lincoln, Nebraska.
White, Kate E.....		Manhattan, Kansas.
1872.		
Haines, Theophania M.....		Ellis, Kansas.
Todd, Albert.....		West Point, New York.
Williston, S. Wendell.....		Manhattan, Kansas.
1873.		
Davis, Eliza Z.....		Manhattan, Kansas.
Kimble, Samuel.....		Manhattan, Kansas.
1874.		
Brous, Harry A.....		Manhattan, Kansas.
Clark, Edgar F.....		Manhattan, Kansas.
Davis, John E.....		Manhattan, Kansas.
Gilbert, William D.....		Manhattan, Kansas.
White, A. Judson.....		Manhattan, Kansas.
1875.		
Lofinck, Reuben E.....		Nevada, Missouri.
Stewart, Alice E.....		Oberlin, Ohio.
1876.		
Gale, George A.....		Manhattan, Kansas.
Gale, Ella M.....		Manhattan, Kansas.
Sawyer, Nellie.....		Ottawa, Kansas.
Kimball, Carrie M.....		Manhattan, Kansas.
Whitman, Minerva E.....		Lyndon, Kansas.
1877.		
Child, Ella S.....		Manhattan, Kansas.
Failyer, George H.....		Spring Creek, Kansas.
Griffing, John S.....		Manhattan, Kansas.
Howard, Walter C.....		Manhattan, Kansas.
Hoyt, Frederick O.....		Hiawatha, Kansas.
Humphrey, Louis E.....		Milford, Kansas.
LaTourrette, James F.....		Fort Lyon, Colorado.
Leasure, Marion F.....		LaCygne, Kansas.
Ulrich, William.....		Manhattan, Kansas.

TABULAR EXHIBIT, showing attendance by terms, sex, average age, and counties.

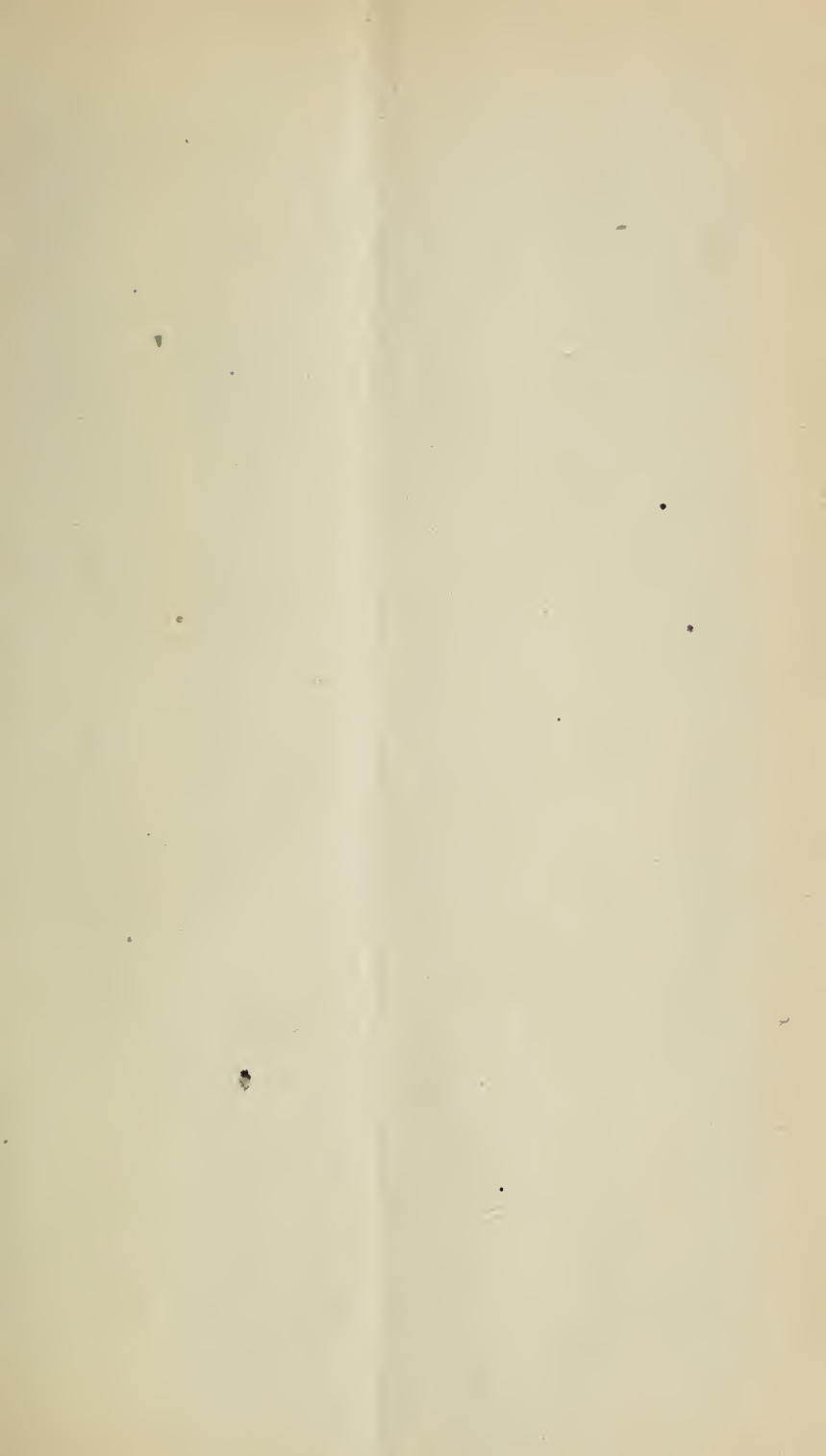
Terms.	Number of Students.			Aver. age of Students.			Residence.		
	Male.	Fem.	Total.	Male.	Fem.	Total.	Co.	St ^e te	Tot.
January 7—May 26, 1875.....	75	43	118	18.9	17.4	18.4	29	5	34
August 26—Dec. 23, 1875. ...	108	69	177	18.4	17.5	18.0	33	6	39
Total.....	154	83	237	18.6	17.5	18.2	40	8	48
January 5—May 17, 1876.....	118	77	195	18.2	17.4	17.4	34	7	41
August 24—Dec. 21, 1876.....	111	67	178	18.3	17.1	18.0	36	6	42
Total.....	184	117	301	18.5	17.3	18.0	45	8	53
January 4—May 23, 1877.....	123	52	175	18.8	17.2	18.3	32	6	38

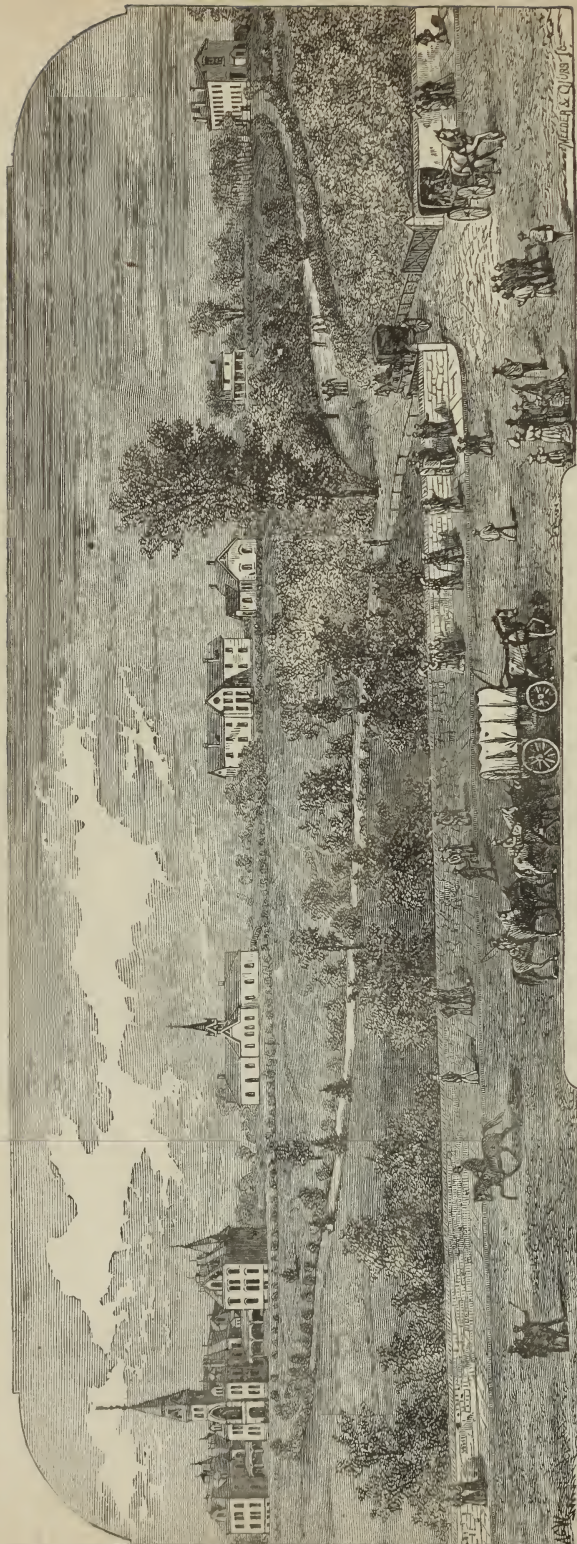
STATEMENT BY COUNTIES, showing the attendance each term.

Counties.	1875.			1876.			1877.
	Spr ⁱ g Term.	Fall Term.	Total.	Spr ⁱ g Term.	Fall Term.	Total.	Spr ⁱ g Term.
Allen.....	2	.....	2	.....	.....	.....	.....
Atchison.....	1	1	2	2	4	4	3
Brown.....	2	1	2	.....	3	3	1
Butler.....	3	.....	3	.....	1	1	1
Chase.....	.....	3	3	.....	2	2	.....
Cherokee.....	3	4	4	4	8	8	8
Clay.....	3	2	4	3	1	3	5
Cloud.....	.....	.....	.....	.....	1	1	.....
Coffey.....	1	5	5	4	1	5	.....
Crawford.....	.....	.....	.....	.....	1	1	1
Davis.....	5	8	11	12	9	19	11
Dickinson.....	3	8	8	6	1	6	1
Doniphan.....	.....	1	1	.....	2	2	.....
Douglas.....	.....	1	1	1	.....	1	.....
Ellsworth.....	.....	2	2	2	.....	2	.....
Ford.....	.....	.....	.....	.....	.....	.....	1
Franklin.....	3	4	5	3	.....	3	.....
Greenwood.....	1	.....	1	2	1	3	1
Howard.....	1	.....	1	.....	.....	.....	.....
Harvey.....	.....	1	1	1	1	1	.....
Jackson.....	6	1	6	1	.....	1	.....
Jefferson.....	3	4	6	4	2	6	2
Jewell.....	.....	.....	.....	.....	1	1	2
Johnson.....	.....	1	1	2	.....	2	.....
Labette.....	3	3	5	3	6	7	5
Leavenworth.....	.....	.....	.....	2	2	2	2
Linn.....	5	3	7	3	1	3	1
Lyon.....	.....	3	3	2	5	7	6
Marion.....	.....	.....	.....	1	.....	1	1
Marshall.....	1	5	5	4	3	5	3
McPherson.....	.....	.....	.....	1	.....	1	1
Miami.....	1	1	2	1	1	1	.....
Mitchell.....	1	.....	1	.....	.....	.....	.....
Nemaha.....	3	2	4	3	2	5	2
Neosho.....	.....	.....	.....	.....	1	1	2
Osage.....	4	6	8	5	1	6	2
Osborne.....	.....	1	1	1	2	3	2
Ottawa.....	1	.....	1	1	.....	1	.....
Phillips.....	.....	.....	.....	.....	2	2	3
Pottawatomie.....	4	17	19	18	8	19	10
Reno.....	.....	1	1	1	.....	1	.....
Rice.....	.....	.....	.....	.....	1	1	2
Riley.....	43	67	83	79	78	117	66
Russell.....	.....	.....	.....	.....	.....	.....	1
Saline.....	1	2	2	1	1	2	.....
Sedgwick.....	4	2	4	1	1	2	1
Shawnee.....	1	2	3	4	3	7	6
Wabaunsee.....	.....	6	6	9	7	14	7
Wallace.....	.....	.....	.....	.....	1	1	.....
Washington.....	2	1	3	.....	3	3	1
Woodson.....	1	.....	1	.....	.....	.....	.....
Wyandotte.....	.....	1	1	1	.....	1	.....

States and Territories: Colorado, 2; Illinois, 3; Indiana, 3; Indian Territory, 2; Iowa, 1; Missouri, 1; New Mexico, 2; New York, 6; Pennsylvania, 1.







(*Eclectic Geography — Kansas Edition.*)

1. College, north wing only completed.
2. Chemical Laboratory.
3. Mechanics' Hall.
4. Horticultural Hall.
5. President's House.
6. Societies' Hall.

(*Van Antwerp, Bragg & Co., Cincinnati.*)

KANSAS STATE AGRICULTURAL COLLEGE.

For Description of Buildings, see page 34.



CATALOGUE

OF THE

OFFICERS AND STUDENTS

OF THE

State Agricultural College

OF

KANSAS.

AUGUST, 1877, TO JUNE, 1880.

MANHATTAN, KANSAS:
PRINTING DEPARTMENT, AGRICULTURAL COLLEGE.
1880.

Board of Regents.



HON. STEPHEN M. WOOD, of Elmdale,
President of the Board.

HON. W. L. CHALLISS, of Atchison,
Vice-President.

HON. E. B. PURCELL, of Manhattan,
Treasurer.

HON. D. C. MCKAY, of Ames.

HON. A. L. REDDEN, of Eldorado.

HON. A. J. HOISINGTON, of Great Bend.

PRESIDENT GEO. T. FAIRCHILD (*ex officio*),
Secretary.

L. R. ELLIOTT, *Land Agent*,
M. L. WARD, *Loan Commissioner*, } Manhattan.

With the Compliments of

President Geo. T. Fairchild.

Board of Regents.



HON. STEPHEN M. WOOD, of Elmdale,
President of the Board.

HON. W. L. CHALLISS, of Atchison,
Vice-President.

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Treasurer.

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HON. A. J. HOISINGTON, of Great Bend.

PRESIDENT GEO. T. FAIRCHILD (*ex officio*),
Secretary.

L. R. ELLIOTT, <i>Land Agent</i> ,	} Manhattan.
M. L. WARD, <i>Loan Commissioner</i> ,	

Faculty.

GEORGE T. FAIRCHILD, A. M., PRESIDENT,
Professor of Political Economy.

MILAN L. WARD, A. M.,
Professor of Mathematics and English.

EDWARD M. SHELTON, M. S.,
*Professor of Practical Agriculture, and Superintendent
of the Farm.*

GEORGE H. FAIRLYER, M. S.,
Professor of Chemistry and Physics.

EDWIN A. POPENOE, A. B.,
Professor of Botany and Horticulture.

JEREMIAH E. PLATT, A. M.,
Professor of Elementary English and Mathematics.

JOHN D. WALTERS,
Instructor in Industrial Drawing.

TIMOTHY T. HAWKES,
Superintendent of the Mechanical Department.

ALBERT A. STEWART,
Superintendent of the Printing Department.

IRA D. GRAHAM,
Superintendent of the Telegraph Department.

MRS. MARY E. CRIPPS,
*Superintendent of the Departments of Sewing and
Household Economy.*

WILLIAM L. HOFER,
Teacher of Instrumental Music.

Students.

RESIDENT GRADUATES.

1879-80.

Corvin J. Reed, Class of '79, . . . *St. Clere, Pottawatomie.
Clarence E. Wood, Class of '79, . . . Manhattan, Riley.

FOURTH YEAR.

1879-80.

Emma L. Adams Manhattan, Riley.
Augustine Beacham Irving, Marshall.
Lizzie R. Cox Manhattan, Riley.
Flora Donaldson Manhattan, Riley.
Emma Hoyt Manhattan, Riley.
Dora Kinsey Silver Lake, Shawnee.
Emma Knostman Manhattan, Riley.
Grace M. Parker Manhattan, Riley.
Henry Augustus Platt Manhattan, Riley.
Noble A. Richardson Guilford, Wilson.
Maria E. Sickels Schell City, Vernon, *Missouri*.

1878-79.

Arthur T. Blain Manhattan, Riley.
Ettie Campbell Manhattan, Riley.
Wilmer K. Eckman Osborne, Osborne.
C. M. Hulett Edgerton, Johnson.
James H. Lynch Manhattan, Riley.
Thomas R. Moore Smith Center, Smith.
Corvin J. Reed St. Clere, Pottawatomie.
Harry C. Rushmore Grantville, Jefferson.

* Post-office and county. State in Italics.

Lewis A. Salter Independence, Montgomery.
 William H. Sikes Vienna, Pottawatomie.
 Clarence E. Wood Manhattan, Riley.
 Ella M. Vincent Manhattan, Riley.

1877-78.

Albert N. Godfrey Madison, Greenwood.
 Charles S. McConnell Manhattan, Riley.
 George L. Platt Manhattan, Riley.
 Irving Todd Manhattan, Riley.
 Amos E. Wilson Solomon City, Dickinson.

THIRD YEAR.

1879-80.

Sarah Ayres Silver Lake, Shawnee.
 Emma Campbell Manhattan, Riley.
 Charles C. Chenoweth Baxter Springs, Cherokee.
 Edward P. Coleman Shenandoah, Page, *Iowa*.
 Eva Couse Edgerton, Johnson.
 Edward V. Cripps Manhattan, Riley.
 *Orpheus Durkee Eureka, Greenwood.
 *William P. Favour Eureka, Greenwood.
 Emma Glossop Manhattan, Riley.
 William E. Gross Salina, Saline.
 Harvey F. Haines Manhattan, Riley.
 Fletcher M. Jeffery Manhattan, Riley.
 William J. Jeffery Manhattan, Riley.
 *Frederick Jewell Eldorado, Butler.
 Darwin S. Leach Beloit, Mitchell.
 Issie Lewis Manhattan, Riley.
 William J. Lightfoot Jewell City, Jewell.
 Dalinda Mason Delphos, Ottawa.
 William McBratney Centralia, Nemaha.
 Samuel E. McNair Manhattan, Riley.
 Minnie Milliken Olathe, Johnson.
 Wirt S. Myers Carlyle, Allen.
 Edwin C. Paine Ivy, Lyon.
 Mark A. Reeve Americus, Lyon.
 George E. Rose Stilson, Cherokee.
 William N. Rose Stilson, Cherokee.
 John Charles Rust Atchison, Atchison.

* Expelled.

John A. Sloan	Wakefield, Clay.
Cora Snow	Manhattan, Riley.
Charles H. Stiles	Pavilion, Wabaunsee.
Grace R. Strong	Manhattan, Riley.
George F. Thompson	Baltimore, Cowley.
Rowena J. Whaley	Manhattan, Riley.
William E. Whaley	Manhattan, Riley.
Robert J. Wylie	Tabor, Clay.

1878-79.

May Campbell	Manhattan, Riley.
Henry F. Coe	Manhattan, Riley.
Dora Edmiston	Arthur, Moultrie, <i>Illinois</i> .
John N. Morrow	Olathe, Johnson.
Cora Ulrich	Manhattan, Riley.

1877-78.

Estelle Bouton	Madison, Greenwood.
Ellen Fletcher	Manhattan, Riley.
Henry J. Harvey	Wichita, Sedgwick.
Giles P. Howard	Manhattan, Riley.
Emma L. Parish	Manhattan, Riley.

 SECOND YEAR.

1879-80.

Frank L. Abbey	Abilene, Dickinson.
Chester J. Allen	Beloit, Mitchell.
Viola I. Bacheller	Lanark, Rush.
Alice M. Browning	Manhattan, Riley.
Bartholomew Buchli	Newbury, Wabaunsee.
Charles M. Call	Silver Lake, Shawnee.
Henry L. Call	Silver Lake, Shawnee.
Lewis Call	Silver Lake, Shawnee.
James H. V. Calvin	Manhattan, Riley.
Ezra S. Clarke	Manhattan, Riley.
Mary Clarke	Manhattan, Riley.
Albert Copley	Perryville, Jefferson.
John T. Copley	Perryville, Jefferson.
William J. Cowell	Wakefield, Clay.
Ida Cranford	Brookville, Saline.
George Donaldson	Manhattan, Riley.
George H. Dow	Manhattan, Riley.
Agnes M. Fairchild	Manhattan, Riley.

William Ward Fisk	Rock, Cowley.
John E. Gish	Abilene, Dickinson.
Joseph T. Gist	Manhattan, Riley.
William J. Griffing	Manhattan, Riley.
J. W. Hamilton	Florence, Marion.
John D. Hartman	Abilene, Dickinson.
Loren E. Hobbs	Essex, Essex, <i>Massachusetts</i> .
Harry H. Hopkins	Manhattan, Riley.
Mina J. Hosmer	Manhattan, Riley.
Hortense L. Houston	Manhattan, Riley.
George H. Hungerford	Manhattan, Riley.
Henry L. Hunt	Columbus, Cherokee.
William W. Hulett	Edgerton, Johnson.
Frank H. Hulse	Elk Falls, Elk.
George C. Keyes	Pavilion, Wabaunsee.
Warren Knaus	Buffalo, Wilson.
George D. Knipe	Manhattan, Riley.
Lizzie Larsh	Eaton, Preble, <i>Ohio</i> .
Clarence Limbocker	Manhattan, Riley.
Clyde Limbocker	Manhattan, Riley.
Frank W. Lyon	Ivy, Lyon.
Silas C. Mason	Delphos, Ottawa.
Katie I. McGuire	Manhattan, Riley.
Alice L. McNair	Manhattan, Riley.
Charles W. Neiman	Havensville, Pottawatomie.
Lincoln H. Neiswender	Silver Lake, Shawnee.
Manda Noland	Manhattan, Riley.
Allie Peckham	Manhattan, Riley.
Cora C. A. Pray	Manhattan, Riley.
Frederick H. Prescott	Great Bend, Barton.
W. Alfred Quayle	Auburn, Shawnee.
Alta Randel	Manhattan, Riley.
Charles F. Randel	Manhattan, Riley.
Henry A. Randel	Manhattan, Riley.
Bettie Richards	Moodyville, Pottawatomie.
Joseph N. Robinson	Auburn, Shawnee.
Belle Selby	Garnett, Anderson.
James Shaw	Randolph, Riley.
Burton L. Short	Crestline, Cherokee.
Cora Vaught	Eldorado, Butler.
J. T. Willard	Wabaunsee, Wabaunsee.
Albert O. Woods	Wellington, Sumner.
John M. Wylie	Tabor, Clay.

1878-79.

Ella M. Abbott	Manhattan, Riley.
Frank A. Abbott	Manhattan, Riley.
Mollie Anthony	Sherman City, Cherokee.
Edwin M. Barnes	Burlingame, Osage.
Louis C. Bowles	Olathe, Johnson.
Abbie C. Browning	Manhattan, Riley.
Emma L. Browning	Manhattan, Riley.
C. Stewart Buell	Manhattan, Riley.
Delight A. Buell	Manhattan, Riley.
Elisha Burr	Junction City, Davis.
Halleck D. Butts	Valley Falls, Jefferson.
Ella Coburn	Salina, Saline.
Jennie A. Coe	St. Louis, <i>Missouri</i> .
Horace M. Culter	El Paso, Sedgwick.
Albert F. Dickson	Edgerton, Johnson.
James B. Dickson	Edgerton, Johnson.
Albert M. Foreman	Randolph, Riley.
Edward Friend	Valley Falls, Jefferson.
Edgar L. Goin	Brooklyn, <i>New York</i> .
Frank B. Gregg	Burlington, Coffey.
Linda Hatch	Prairie Grove, Republic.
William J. Hillyer	Valley Falls, Jefferson.
George W. N. Howden	Peru, Chautauqua.
Sallie Hutsell	Brownsville, Cherokee.
Walter W. Jaquith	Milford, Davis.
Horace B. Jones	Wabaunsee, Wabaunsee.
Eddie L. Kingsbury	Burlington, Coffey.
Samuel O. Lewis	Ivy, Lyon.
Willis Light	Erie, Neosho.
William P. Luse	Marshall, Saline, <i>Missouri</i> .
Fred C. Lynch	Columbus, Cherokee.
Mattie E. Mails	Manhattan, Riley.
John Mann	Lyons, Rice.
John L. McNair	Manhattan, Riley.
James Merrill	Topeka, Shawnee.
Samuel M. Morgan	Americus, Lyon.
Ida L. Noyes	Wabaunsee, Wabaunsee.
William A. Pfoutz	Lancaster, Atchison.
Charles M. Records	Peru, Chautauqua.
William E. Rollings	Delphos, Ottawa.
Nannie Scott	Sherman City, Cherokee.
Cassius M. Shartell	Fulda, Chautauqua.
George L. Sigman	Peru, Chautauqua.
Bion B. Smith	Solomon City, Dickinson.
Charles A. Southwick	Riley Center, Riley.

Joseph C. Spicer	Emporia, Lyon.
Alice G. Spooner	Wakefield, Clay.
R. O. Thomen	Junction City, Davis.
George Throckmorton	Burlington, Coffey.
C. R. Welch	Burton, Harvey.
Frank H. Williston	Manhattan, Riley.
Elmer E. Wilson	Columbus, Cherokee.
Robert H. Wright	Dodge City, Ford.
T. J. Wyland	Jewell City, Jewell.

1877-78.

Alice M. Allen	Stilson, Cherokee.
Hattie Allen	Stilson, Cherokee.
Bernhard Anderson	Lindsburg, McPherson.
Jasper G. Cowell	Wakefield, Clay.
George A. Cox	Junction City, Davis.
John Eckman	Osborne City, Osborne.
Watson D. Haines	Manhattan, Riley.
Pierce Hickey	Marysville, Marshall.
Gertrude Irish	Manhattan, Riley.
Helen Irish	Manhattan, Riley.
John Lewin	Wakefield, Clay.
Mollie J. Marcell	Ottawa, Franklin.
Seward N. Peck	Junction City, Davis.
Anna L. Phillips	Manhattan, Riley.
Charles E. Romberger	Millersburg, <i>Pennsylvania</i> .
Lizzie A. Russell	Wichita, Sedgwick.
Tully Scott	Beloit, Mitchell.
Clement O. Smith	Emporia, Lyon.
Albert H. Stiles	Pavilion, Wabaunsee.
George H. Storch	Atchison, Atchison.
Carrie M. Williston	Manhattan, Riley.
Nena M. Wilson	Solomon City, Dickinson.
John H. Winne	Manhattan, Riley.

FIRST YEAR.

1879-80.

Herman Aderhold	Alma, Wabaunsee.
Frank Aley	Cedar Vale, Chautauqua.
Jessie Allingham	Manhattan, Riley.
Ada Allis	Virgil, Greenwood.
Emett Allis	Virgil, Greenwood.
John Anderson	Eldorado, Butler.

Thomas Andrews	Rossville, Shawnee.
Alfred G. Bass	Topeka, Shawnee.
Robert F. Barnett	Afton, Sedgwick.
George W. Bauer	Eudora, Douglas.
Robert S. Baxter	Auburn, Shawnee.
Benjamin B. Bayles	Manhattan, Riley.
Rachel M. Bayles	Manhattan, Riley.
Horace G. Benedict	Blue Rapids, Marshall.
Samuel B. Berry	Bryant, Butler.
Florence Bistline	Rossville, Shawnee.
Hattie Blades	Junction City, Davis.
Erskin J. Blosser	Malta Bend, Saline, <i>Missouri</i> .
George W. Boles	Baxter Springs, Cherokee.
William Bolton	Newbury, Wabaunsee.
Allyn Boughton	Dover, Shawnee.
Lester T. Boutwell	Wakefield, Clay.
John J. Breakbill	Manhattan, Riley.
Benjamin Campbell	Manhattan, Riley.
Charles Cassteel	Louisburg, Miami.
John W. Chenoweth	Baxter Springs, Cherokee.
Robert W. Chestnut	Clay Center, Clay.
Albert Clardy	Wamego, Pottawatomie.
Charles N. Clark	Garnett, Anderson.
Rebecca Coburn	Salina, Saline.
Jennie E. Coburn	Salina, Saline.
George B. Conklin	Whiting, Jackson.
Ann Etta Coolidge	Delphos, Ottawa.
William A. Corey	Plowboy, Shawnee.
George W. Cotton	Rural, Jefferson.
Sarah Craig	Manhattan, Riley.
Fremont DeLaMater	Alma, Wabaunsee.
John A. DeTar	Edgerton, Johnson.
Robert H. Drummond	Woodhull, Chase.
Frank Dunn	Ozark, Anderson.
Allen B. Eells	Manhattan, Riley.
Selma Ehram	Clay Center, Clay.
Timothy Emert	St. Marys, Pottawatomie.
John P. Everett	Gardner, Johnson.
Edwin M. Fairchild	Manhattan, Riley.
Woods S. Ferguson	Spring Hill, Johnson.
Julia Y. Fisher	Whitesville, Andrew, <i>Missouri</i> .
Mary J. Fisher	Empire Prairie, Andrew, <i>Missouri</i> .
Matthew W. Fournoy	Madison, Colfax, <i>New Mexico</i> .
William H. Foss	Auburn, Shawnee.
George W. Fowler	Medina, Jefferson.
George B. Gallagher	Mildred, Morris.
Independence Day Gardiner	Wakarusa, Shawnee.

Lydia P. Gardiner	Wakarusa, Shawnee.
Lincoln F. Gault	Great Bend, Barton.
Julia George	Manhattan, Riley.
Glenn S. Green	Junction City, Davis.
Mary L. Griffing	Manhattan, Riley.
Simeon H. Harris	Monticello, Johnson.
Noah T. Harvey	Beaumont, Cherokee.
Abraham Helmick	Weir City, Cherokee.
Eli A. Helmick	Weir City, Cherokee.
Norman B. Heston	Ogden, Riley.
Hattie Himes	Manhattan, Riley.
Rudolph A. Hollenberg	Hanover, Washington.
George E. Hopper	Downs, Osborne.
Charles S. Hotchkiss	Greene, Chenango, <i>New York.</i>
Anna Hunt	Columbus, Cherokee.
Cora M. Hunting	Manhattan, Riley.
Alden F. Huse	Manhattan, Riley.
Corliss W. Huse	Manhattan, Riley.
Edmund F. Hynes	Marysville, Marshall.
Jennie Jamison	Delphos, Ottawa.
Augustus Jordan	Ogden, Riley.
James A. Keeney	Ogallah, Trego.
Edwin H. Kern	Ionia, Jewell.
Emma Kimble	Manhattan, Riley.
Lorena Kinsey	Silver Lake, Shawnee.
Ella Krysher	Carbondale, Jackson, <i>Illinois.</i>
Marshall N. LaMaster	Gardner, Johnson.
William Lawrence	Baxter Springs, Cherokee.
Joseph Garfield Lay	Grantville, Jefferson.
John Lender	Manhattan, Riley.
Gregg P. Lewis	Ivy, Lyon.
John W. Lewis	Manhattan, Riley.
*Orval Lockhart	Eureka, Greenwood.
Joseph B. Lohmuller	Centralia, Nemaha.
Charles Lowe	Newbury, Wabaunsee.
Jacob Lund	Bismarck, Wabaunsee.
Angie Mackey	Junction City, Davis.
Ella Mackey	Junction City, Davis.
J. F. Mahaffie	Olathe, Johnson.
M. H. Markcum	Winfield, Cowley.
Charles Marlatt	Manhattan, Riley.
Thomas F. Marshall	Gardner, Johnson.
Irving Marshall	Manhattan, Riley.
John C. Mauney	Auburn, Shawnee.
Clara McBratney	Centralia, Nemaha.
George G. McConnell	Menoken, Shawnee.
May McConnell	Menoken, Shawnee.

Nettie McConnell	Menoken, Shawnee.
William B. McCrea	Norton Center, Norton.
Charles McKerlie	Sturgis, St. Joseph, <i>Michigan</i> .
Orman A. McMullen	Beaumont, Cherokee.
Mattie McNair	Manhattan, Riley.
Charles Messenger	Baltimore, Cowley.
Eugene H. Miller	Rossville, Shawnee.
Hiram Miller	Valley Falls, Jefferson.
William E. Miller	Onaga, Pottawatomie.
Anna Moffitt	Cottonwood Falls, Chase.
Alyson R. Moore	Chapmanville, Clay.
Charles W. Moore	Beverly, Essex, <i>Massachusetts</i> .
William Moore	Auburn, Shawnee.
William A. Moses	Enterprise, Dickinson.
Harry Mullen	Auburn, Shawnee.
Norman Munz	Ogden, Riley.
Dana Needham	Lane, Franklin.
Henry Nelson	Bennington, Ottawa.
Mary O'Brian	Onaga, Pottawatomie.
Carrie O'Meara	Onaga, Pottawatomie.
*Carl Ott	Janesville, Greenwood.
Solon M. Paddleford	Stockdale, Riley.
Charles Pattison	Eldorado, Butler.
Ashman Patridge	Independence, Montgomery.
Frank Paul	Blue Rapids, Marshall.
George C. Peck	Junction City, Davis.
Hattie L. Peck	Junction City, Davis.
Roscius K. Peck	Junction City, Davis.
William O. Perkins	Ottawa, Franklin.
Oscar F. Pierce	Mound City, Linn.
Jennie S. Platt	Wabaunsee, Wabaunsee.
Emery Melzar Platt	Manhattan, Riley.
William G. Pomeroy	Burlingame, Osage.
Willis P. Popenoe	Topeka, Shawnee.
Benjamin Powers	Manhattan, Riley.
May V. Quinby	Wakefield, Clay.
Theodore B. Reynolds	Fort Riley, Davis.
Frank E. Richardson	Waushara, Lyon.
Willis O. Schantz	Ontario, Jackson.
Grant Selby	Garnett, Anderson.
William L. Sexton	Wichita, Sedgwick.
John E. Shaffer	Clinton, Henry, <i>Missouri</i> .
Charles W. Sherman	Wilder, Johnson.
Rosa B. Shore	Camden, Morris.
Cyrus Shumway	Auburn, Shawnee.
Eugene Snodgrass	Augusta, Butler.
William C. Snodgrass	Augusta, Butler.

Jerome Stuart	Manhattan, Riley.
Samuel Thackrey	Manhattan, Riley.
Sarah Thackrey	Manhattan, Riley.
George K. Tyler	Council Grove, Morris.
Frederick E. Wahl	Manhattan, Riley.
Elbert A. Wall	Wilmington, <i>Ohio</i> .
Sarah E. Walden	King City, McPherson.
Milan T. Ward	Orion, Henry, <i>Illinois</i> .
Frank M. Walters	Hiawatha, Brown.
John C. Welch	Phillipsburg, Phillips.
William Wilson	America City, Nemaha.
John E. Wallace	Junction City, Davis.
Bertha E. Whitney	Manhattan, Riley.
Dudley Wingo	Lawndale, Jackson.
Clarence D. Wood	Elmdale, Chase.
William Woodburn	Wetmore, Nemaha.
*Francis F. Worley	Eureka, Greenwood.
William A. Young	Idell, Crawford.
Sumner J. Zerger	Lazette, Cowley.

* Expelled.

1878-79.

Harmon Abbott	Manhattan, Riley.
Albert H. Allen	America City, Nemaha.
George R. Ashmead	Ashmead, Ellsworth.
Frank D. Axtell	Westmoreland, Pottawatomie.
Frederick W. Axtell	Westmoreland, Pottawatomie.
John J. Breakbill	Manhattan, Riley.
Hattie Clarke	Manhattan, Riley.
Alvin Donaldson	Chelsea, Butler.
Annette Durkee	Eureka, Greenwood.
Katie Emerick	Millersburg, Doniphan, <i>Pennsylvania</i> .
Logan Everhart	Parsons, Labette.
Henry E. Farnsworth	Rocky Hill, Lincoln.
John B. Flack	Enterprise, Dickinson.
John M. Gist	Manhattan, Riley.
George A. Gordon	Holton, Jackson.
Ernest Hicks	Columbus, Cherokee.
William G. Hicks	Columbus, Cherokee.
George Humphreys	Oxford, Sumner.
James H. Jacobs	Cherokee, Crawford.
John H. Kent	Wabaunsee, Wabaunsee.
Edgar Miller	Junction City, Davis.
Hattie L. Mills	Foristel, St. Charles, <i>Missouri</i> .
Cassius C. Nelson	Hayes, Douglas.
Ada A. Neusbaum	Manhattan, Riley.
H. L. Neusbaum	Manhattan, Riley.

Amy E. Noyes	Wabaunsee, Wabaunsee.
James F. Outt	Independence, Montgomery.
DeWitt C. Petitt	Columbus, Cherokee.
John R. Talbott	Atchison, Atchison.
William S. Tarrant	Winfield, Cowley.
C. A. Wahl	Manhattan, Riley.
W. H. Wahl	Manhattan, Riley.
Rosette Walters	Milford, Davis.
William Whiteside	Cherokee, Crawford.
J. E. Wilson	Auburn, Shawnee.
Ivaloo Winder	Manhattan, Riley.
J. W. Woodworth	Monmouth, Crawford.

1877-78.

S. D. Aiken	Richmond, Franklin.
Kate Bean	Concordia, Cloud.
Flora Beckwith	Ottawa, Franklin.
James A. Bell	Gardner, Johnson.
Frank D. Brous	Manhattan, Riley.
William J. Brous	Manhattan, Riley.
Paul Challiss	Atchison, Atchison.
Emma L. Cook	Wichita, Sedgwick.
William W. Day	Abilene, Dickinson.
Julia Finney	Wamego, Pottawatomie.
Frederick Fleeker	Manhattan, Riley.
Steven A. Garr	Independence, Montgomery.
Laura M. Godfrey	Madison, Greenwood.
Georgie Goodwin	Manhattan, Riley.
Henry M. Hook	Leavenworth, Leavenworth.
H. M. Jones	Wabaunsee, Wabaunsee.
Bertha N. Lantz	Allenville, Mifflin, <i>Pennsylvania</i> .
C. F. Lundberg	New Gottland, McPherson.
James F. McClure	Junction City, Davis.
William H. Mitchell	Great Bend, Barton.
Edgar Patton	Ashville, Mitchell.
Jeremiah B. Patton	Ashville, Mitchell.
Crume Pegan	Gatesburg, Barton.
James Rairden	Clifton, Clay.
Carrie Reed	St. Clere, Pottawatomie.
Herbert L. Russell	Manhattan, Riley.
Louisa Spooner	Wakefield, Clay.
Matthew Spooner	Wakefield, Clay.
Frank Sternberg	Fort Harker, Ellsworth.
Charles A. Strong	Wild Cat, Riley.
George Theis	Columbus, Cherokee.
Ettie J. Thompson	Irving, Marshall.
H. W. Thorne	Johnstown, Fulton, <i>New York</i> .

Charles W. Townsdin	Concordia, Cloud.
Mary Webb	Irving, Marshall.
Arthur Wills	Phillipsburg, Phillips.
Willard Whitney	Manhattan, Riley.
Walter S. Whitford	Manhattan, Riley.
George A. Wilson	Roxallana, Roan, <i>West Virginia</i> .
Etta Wylie	Tabor, Clay.
Oliver M. Wylie	Tabor, Clay.
William E. Younger	McPherson, McPherson.

SELECT COURSE.

1879-80.

William A. Campbell Manhattan, Riley.

1878-79.

Charles W. Bates Morristown, Laurville, *Vermont*.

WHOLE NUMBER OF STUDENTS.

[The catalogue gives the names of all students present at any time during the past three years. Those recorded under the years 1877-8 and 1878-9 have not attended since.]

Number in catalogue :	1877-8.	1878-9.	1879-80.
Resident Graduates			2
Fourth Year	5	12	11
Third Year	5	5	35
Second Year	23	54	61
First Year	42	37	166
Select Course		1	1
Whole number enrolled in these years :			
Gentlemen	99	151	203
Ladies	51-150	56-207	73-276

Number of different students in three years	458
Number of counties of Kansas represented	61
Number of other States represented	11

Objects and Methods.

ENDOWMENT.

An act of Congress, approved July 2d, 1862, gave to each State public lands to the amount of 30,000 acres for each of its Senators and Representatives in Congress according to the census of 1860, for the "endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, * * *, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

Under this act, the State of Kansas received 82,313.53 acres of land; and in 1863 established the State Agricultural College, by endowing with these lands Bluemont College, which had been erected near Manhattan, under the auspices of the M. E. Church, but was presented to the State for the purposes named in the act of Congress. Of these lands, 57,473.59 acres are now sold, giving a fund of over \$290,000, which is by law invested in school-district bonds, the interest alone being used for current expenses of the College. There remain unsold 24,839.94 acres of land, lying in Riley, Dickinson, Washington, and Marshall counties.

In 1873 the College was reorganized upon a thoroughly industrial basis, with prominence given to practical agriculture and related sciences; and in 1875 the furniture and apparatus of the College were moved to buildings upon the farm of 155 acres, one mile nearer the city of Manhattan.

OBJECTS.

This College now proposes to carry out the objects of its endowment in several ways.

First, it teaches the sciences applied to the various industries of farm, shops and home. Chemistry, botany, entomology, zoology, and mechanics, are made prominent means of education to quick observation and accurate judgment. Careful study of the minerals, plants, and animals themselves, illustrates and fixes the daily lesson. At the same time, lessons in agriculture and horticulture show the true applications of science; and both are enforced by actual experience.

Second, it gives a substantial education to men and women, among farmers and artisans, and in business life. Such general information and discipline of mind and character as help to make intelligent and useful citizens, are offered in all its departments.

Third, it trains in the elements of the arts themselves, and imparts such skill as makes the hands ready instruments of thoughtful brains. The drill of the shops, gardens and farm, is made a part of a general education to usefulness, and insures a means of living to all who make good use of it. At the same time, it preserves habits of industry and manual exertion, and cultivates a taste for rural and domestic pursuits.

Fourth, it strives to increase our experimental knowledge of agriculture and horticulture. So far as means and circumstances permit, experiments are undertaken, with a view to more definite results than ordinary experience can give. At the same time, the students themselves are trained to a more accurate observation and judgment in such practical tests of principles in farming.

Fifth, it seeks to disseminate such practical truths as have stood the test of scientific inquiry. For this purpose it publishes the weekly *INDUSTRIALIST*; and its officers share in the debates and consultations of farmers and horticulturists throughout the State.

COURSES OF STUDY.

The necessity for so adjusting various branches of study that there shall be as little waste as possible in acquiring both information and discipline, is felt by every teacher. For this reason, almost all schools offering a real education present some well-defined arrangement for progress in studies, and call it a course. Such a course is not designed to be absolutely inflexible, but to guide the judgment into some definite line of progress from which no mere whim shall turn a student aside.

Parallel courses are offered to both sexes, with such differences as their necessities seem to call for. The following outline gives the general scope of the two; but fuller explanations are found elsewhere:—

FIRST YEAR.

FALL TERM.—Arithmetic.

English Structure

Geometrical Drawing.

Industrial.

WINTER TERM.—Book-keeping.

English Analysis.

United States History.

Industrial.

SPRING TERM.—Algebra.

English Composition.

Botany, with Drawing.

Industrial.

SECOND YEAR.

FALL TERM.—Algebra completed.

Elementary Chemistry.

Horticulture.

Industrial.

WINTER TERM.—Geometry, with Drawing.

Practical Agriculture, or Household Economy.

Organic Chemistry and Mineralogy.

Industrial.

SPRING TERM.—Geometry completed.

Entomology and Anatomy.

Analytical Chemistry, or Household Chemistry and Economy.

Industrial.

THIRD YEAR.

FALL TERM.—Trigonometry and Surveying.

Physiology.

General History.

Industrial.

WINTER TERM.—Mechanics, with Drawing.

Agricultural Chemistry.

Rhetoric.

Industrial.

SPRING TERM.—Civil Engineering.

Chemical Physics.

English Literature.

Industrial.

FOURTH YEAR.

FALL TERM.—Agriculture, or Special Hygiene.

Meteorology.

Psychology.

Industrial.

WINTER TERM.—Logic, Deductive and Inductive.

Zoology.

United States Constitution.

Industrial.

SPRING TERM.—Geology.

Botany and Gardening.

Political Economy.

Industrial.

Closely adjusted to this course of study, is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among these lines of training, each student may select, with the approval of the Faculty. Young men may have Agriculture, Horticulture, Carpentry, Cabinet-making, Iron-work, Printing or Telegraphy. Young ladies may have Sewing, Printing, Telegraphy, Music, or Scroll-sawing.

The arrangement of studies in the course is necessarily modified for the next College year, and will be as follows:—

STUDIES FOR 1880-81.

FALL TERM.

First Year.—Arithmetic. English Structure. Geometrical Drawing.

Second Year.—Algebra completed. Elementary Chemistry. Horticulture.

Third Year.—Geometry. Elementary Chemistry. Botany.

Fourth Year.—Agriculture or Hygiene. Meteorology. Psychology.

WINTER TERM.

First Year.—Book-keeping. English Analysis. U. S. History.

Second Year.—Geometry, with Drawing. Practical Agriculture, or Household Economy. Organic Chemistry and Mineralogy.

Third Year.—Trigonometry and Surveying, or Household Economy. Organic Chemistry and Mineralogy. Horticulture.

Fourth Year.—Logic. U. S. Constitution. Zoology.

SPRING TERM.

First Year.—Algebra. English Composition. Botany, with Drawing.

Second Year.—Geometry completed. Entomology and Anatomy. Analytical Chemistry, or Household Chemistry and Economy.

Third Year.—Analytical Chemistry, or Household Economy and Chemistry. Mechanics, with Drawing. Agricultural Chemistry, or General History.

Fourth Year.—Geology. Political Economy. Agricultural Chemistry.

SELECT COURSES.—Persons of suitable age and advancement, who desire to pursue such branches of study as are most directly related to agriculture or other industries, may select such studies, under the advice of the Faculty.

POST-GRADUATE COURSES.—Arrangements can be made for advanced study in the several departments at any time. Special opportunities for investigation and research will be afforded to resident graduates.

DEGREES.

The degree of Bachelor of Science is conferred upon students who complete the full course of four years, and sustain all the examinations.

The degree of Master of Science is conferred upon graduates of three years' standing who give evidence of advancement in the application of science to the arts of practical life, and present an acceptable thesis upon some topic assigned by the Faculty.

DEPARTMENTS OF INSTRUCTION.

PRACTICAL AGRICULTURE.—*Second Year.*—History of agriculture, showing the successive steps by which the art has attained its present position. History and characteristics of breeds; their adaptation to the varying conditions of soil, climate and situation; the relation of stock-raising to general farming. Cultivation of hoed crops; management of corn and roots with reference to stock-feeding and the growth of the finer grains. The growth of the “tame grasses” in Kansas; the best sorts for the State, and their management, as shown by experience on the College Farm and elsewhere. Implements of simple tillage; mechanical principles involved in their construction. Application of labor. Draught; different adjustments, as affecting draught. Use of the dynamometer. Plows for soil and subsoil. Planning farm buildings, barns, piggeries and stables. Draining; soils that need draining; how to lay out a system of drains.

Fourth Year.—General principles governing the development of domestic animals. The laws of heredity of disease,—of normal, abnormal and acquired characters; atavism; correlation in the development of parts; in-and-in breeding and cross breeding; influences affecting fecundity; study of the forms of animals, as shown by the different breeds belonging to the College. The selection and arrangement of the farm with reference to the system to be pursued. Rotation of crops; general advantages of a rotation; the best rotation for the distribution of labor, production of manure, and extermination of weeds. Manures; how best housed and applied; composting; commercial fertilizers. Agricultural experiments; field and feeding experiments. Stock-feeding and meat production; stall-feeding; soiling.

Books of Reference.—Journals of the Royal Agricultural Society of England, Morton's Cyclopedia, Low's Practical Agriculture and Domesticated Animals, Miles' Stock-breeding, Farmers' Calendar, Allen's American Farm Book, The Complete Grazier, Stephens' Book of the Farm, Thomas' Farm Implements, Waring's Draining for Profit and Health, and the reports of our own and other State boards of agriculture.

ANATOMY AND PHYSIOLOGY.—*Third Year.*—The study of Physiology is preceded by a course of lectures on anatomy. In this course, such consideration will be given to the form, structure and location of the different organs as is required for the proper comprehension of Physiology and Hygiene; and, in addition, the external form of domestic animals, particularly the ox and horse, will be studied by the class as a preparation for the study of Stock-breeding. The study of Physiology embraces a thorough consideration of the functions of the organs of the human body, and

the relations these sustain to the conditions of health and disease. Among the principal topics discussed, these may be mentioned: foods and digestion; assimilation; secretion and excretion; the circulation of the blood; the nervous system; the special senses; reproduction.

Books of Reference.—Dalton's Human Physiology, Carpenter's treatise on Human Physiology, Flint's Physiology of Man, Gray's Anatomy, Fleming's Veterinary Obstetrics.

BOTANY.—During the course, two terms are given to the study of Botany. In the spring term, first year, the student is familiarized with the basis and aims of the botanical classifications to a sufficient degree to enable him to appreciate differences and resemblances in the plant kingdom, and is made acquainted with the salient points in plant physiology. In the spring term, fourth year, the intimate structure of plants, a more detailed study of plant physiology,—in the germination of the seed, the growth of cellular substance, and the fertilization of the ovule,—variation, the improvement of varieties, parasitic fungi, are among the topics studied. A portion of this term is devoted to the principles of Landscape Gardening.

Although it is in a large degree the aim of this course in Botany to furnish a foundation for the study of applied Botany in agriculture and horticulture, the advantages of systematic observation and original investigation are kept in view, and the student anticipates the use of the textbook by the use of his eye and brain,—observing and comparing seeds, leaves, stems, flowers, and other portions of plants, keeping notes of his observations for presentation in the class. This plan is followed through the course, with each new topic. A good herbarium and series of charts are used as means of illustration.

Books of Reference.—Gray's Botanical Text-books, Don's History of Dichlamydeous Plants, Wood's Botanies, Darlington's Weeds and Useful Plants, Reports of the New York State Botanist, and various synopses in scientific serials.

HORTICULTURE.—It is the aim to teach this art from a botanical basis. The student applies his knowledge of the prime facts in botanical physiology to the various operations of the nursery, orchard and garden. The instruction is presented in a series of lectures upon the following topics, among others: The scope of Horticulture. General principles of propagation, by buds, by seeds. Production of improved varieties, by careful selection of seeds, by interfertilization of known kinds. Perpetuation of valuable sorts of fruits, by bud propagation; budding, grafting, layering, etc. The important points in nursery manipulation. The orchard; conditions of site, soil, exposure, elevation. Special treatment of the different kinds of fruit trees. Pruning; gathering and storing fruits. Small-fruit culture. Lists of varieties suitable for Kansas planting. Vegetable garden; selection and preservation of seed; planting and transplanting. The management and use of the hot-bed and cold-frame. Forest plantations. Wind-breaks. Hedges. Trees and shrubs for ornamental planting.

Books of Reference.—Don's Encyclopedia of Gardening, Downing's Fruits, Warder's American Pomology, Weidenmann's Beautifying Country Homes, Downing's Landscape Gardening, Thomas' Fruit Culturist, Fuller's Small-Fruit Culturist, Fuller's Grape Culturist, Henderson's Gardening for Profit, Henderson's Practical Floriculture, Barry's Fruit Garden, Horticultural Reports of Kansas and other States.

ENTOMOLOGY.—This science is studied with especial reference to its economic relations with agriculture and horticulture. A brief course in the principles of classification is followed by a more extended study of the life history of beneficial and injurious insects, and means of encouragement of one and the control of the other. Here, as in botany, the student is led to form a basis for the study by his own observations. The instruction is in the form of lectures. Illustrations are furnished from the individual collections of the students, from the entomological collections belonging to the Department, and detailed drawings and charts have been prepared, illustrating points of use in classification.

Books of Reference.—Packard's Guide to the Study of Insects, Harris' Insects Injurious to Vegetation, Riley's Reports, LeBaron's Reports, Reports of the U. S. Entomologist, Transactions of the American Entomological Society, and others.

ZOOLOGY.—The time devoted to this study is principally given to a view of comparative anatomy and physiology. The latter portion of the term is occupied by a brief study of the system of zoological classification in present use, accompanied and illustrated by dissections and the study of fresh, alcoholic and mounted specimens.

Books of Reference.—Agassiz' Seaside Studies, Cuvier, Baird's North American Birds, Wilson's Ornithology, Coues' Birds of the Colorado Valley, Coues' Key, Coues' Birds of the Northwest, and other works.

INORGANIC CHEMISTRY.—This course is opened with a careful study of chemical forces and the laws governing chemical combination. The elements, with their compounds, are next considered in succession as to their history, properties, manufacture, and especially their uses on the farm and in the arts. These lectures are accompanied by an extended course of laboratory practice, in which each student performs every experiment with his own hands. Text-book, Eliot & Storer.

ORGANIC CHEMISTRY.—This comprises a thorough study of the chemistry of the organic compounds, the composition of plants and of the various compounds derived from them. It is accompanied by laboratory practice.

CHEMICAL ANALYSIS.—In this course, each student has his stand in the Qualitative Laboratory, completely furnished with apparatus and chemicals for his own use. He here performs analyses of farm soils, plant ash, commercial manures, ores, minerals, waters, commercial compounds, etc. After completing this course, he enters, if he desires, the Quantitative Laboratory, where he pursues a full course in quantitative analysis. Text-book, Kedzie's Manual.

MINERALOGY.—This includes the study of crystallography, with the properties, forms and uses of the principal minerals of the United States. Blow-pipe analysis forms an important part of the course, each student being required to name and identify a large series of minerals. Text-book, Dana's Mineralogy.

GEOLOGY.—A term's study in the fourth year gives a view of the causes which have produced geologic changes in the past, of the general arrangement of the earth's crust, and of special peculiarities of various strata. Attention is given to the formation of soils and deposits of valuable minerals, especially in Kansas.

AGRICULTURAL CHEMISTRY.—This includes a thorough consideration of the application of chemical principles to the economy of the farm; the origin and formation of soils; the classification and composition of soils; the analysis of soils and their adaptation to purposes of production; the composition and use of manures; composting; chemistry of farm operations, such as plowing, fallowing, draining, etc. Text-book, Johnson's "How Crops Feed."

HOUSEHOLD CHEMISTRY.—A course of lectures on this subject is yearly delivered to a class of young ladies. The course embraces the chemistry of cooking; the composition of food; bread; tea, chocolate and coffee; butter and milk; ripening and preservation of fruits; etc.

PHYSICS.—This includes a full consideration of weights and measures, and specific gravity, followed by experimental study in the Physical Laboratory of the laws of heat, light, with spectrum analysis, electricity and magnetism, and the relation of these forces to plant and animal life.

METEOROLOGY.—Embracing the composition of the atmosphere; atmospheric pressure; temperature and humidity; laws of storms; rain, snow and atmospheric electricity. A full course in meteorological observations is taken, with careful study of instruments and methods. Text-book, Loomis' Meteorology.

ASSAYING AND PHARMACEUTICAL CHEMISTRY may be provided for by special arrangement, when students are qualified to pursue them.

ARITHMETIC.—One term is given to a general review of Arithmetic, the greater part of the time being spent on percentage and its applications. Accuracy and rapidity in computations are required. To those deficient in this respect, a thorough drill is given.

BOOK-KEEPING.—Beginning with a simple cash account, book-keeping is developed through all the principles of single and double entry. Each student provides a full set of blanks and keeps a regular set of books, in which accuracy of calculation and posting and neatness of execution are regarded as essential as correct understanding of the principles. No text-book is used, but all forms and problems are furnished in the class-room.

ALGEBRA.—Algebra is studied two terms. The first is wholly given to the literal notation. The student is thoroughly drilled in the funda-

mental rules, as applied to whole, fractional, and exponential quantities. The second term is devoted to the various forms of the equation and its applications. The equation in its various forms,—simple, quadratic, radical, etc.,—is studied, as an instrument for solving the problems of practical life, in which quantity is an item; for demonstrations of geometrical and trigonometrical theorems; and for the construction of formulas for the use of the engineer and the artisan.

Three things are aimed at in the course in Algebra: first, to train the pupil to methods of reasoning; second, to attain facility in methods of operation; third, to secure expertness in the use of algebraic formulas.

GEOMETRY.—Two terms are given to Geometry. In geometrical drawing, the student has already become familiar with geometrical forms and their construction. The first term is devoted to plane Geometry, in connection with technical drawing, involving the use of lines, angles and surfaces. During the second term, solid and spherical Geometry are studied. Practical problems, involving the principles demonstrated, are given to the class. Hand-books of engineering and of various arts are used for reference.

TRIGONOMETRY AND SURVEYING.—The principles of plane Trigonometry, involved in mensuration and surveying, are first mastered. Surveying includes theory, adjustment and use of instruments; history and methods of U. S. Government Surveys; areas of land; dividing land; retracing old lines; platting; topographical surveying; railroad surveying; leveling—section and cross section; computation of earth-work; field practice with transit, compass, chain, level and rod; drawing and ornamentation of plans and profiles.

MECHANICS AND ENGINEERING.—A careful consideration of the laws of motion and force, as exhibited in all kinds of machines, and in various phenomena of nature, occupies a single term. Another term is given to proper study of materials for buildings, their construction and durability; forms of roofs and bridges; and care and use of machinery.

DRAWING.—This study is taught four terms, two of which are in the first, one in the second, and one in the third year. Students that show special aptitude in this direction are permitted to pursue the study during the remainder of the course.

First Term.—Definitions of lines and geometrical figures; judging lines and angles; construction of perpendiculars to given lines, intersecting and bisecting lines, triangles, four-sided figures and polygons, the circle and its secant lines, ellipses, and various geometrical ornaments. Prof. Walter Smith's four books on geometrical drawing are used as text-books.

Second Term.—Free-hand drawing.—After the study of numbers 3, 4 and 5 of Prof. Walter Smith's Text-books of Art Education, drawing from nature is taken up. Leaves, flowers and fruits are taken as subjects, and placed in such positions that the perspective will not interfere seriously with a correct perception of form. Each student is required to finish a

set of drawings. Lectures on principles and history of ornamentation are given occasionally.

Third Term.—Projection of the straight line and the circle ; use of drawing board, T square, and water colors ; principles of shades and shadows ; principles of parallel and angular perspective ; principles of topographical drawing.

Fourth Term.—Projection of the conic sections and other regular curves ; intersections of geometrical solids. Each student is required to draw and color a set of plans for a simple farm building, and another set of plans giving details of some farm machine.

Books of Reference.—Warren's Descriptive Geometry, Walter Smith's Manuals on Art Education, Woodward's National Architect, Guild's American Stair-Builder, Andre's Hand-book of Topographical Drawing, Davies' Shades and Shadows.

ENGLISH LANGUAGE AND LITERATURE.—*First Year.*—The study of English Grammar is made to serve directly in clear perception and correct expression. Such practice in analysis and parsing as may give pupils a clear idea of the English sentence in all its parts, is associated with daily exercises in expression and criticism. A careful study of words and their elements,—roots, stems, prefixes and suffixes,—associating them with their origin and history, continues the course in English. Compound terms in formation and use, distinctions in synonyms, and associated meanings of words, are studied with care. Sentences are also analyzed with reference to their meaning, varieties of expression for the same meaning, shades of thought, and propriety in expression. At the same time, the daily exercises are made a means of training in exact articulation, spelling, writing, and the essentials of good reading.

Principles and methods in English Composition are then taken up, with David J. Hill's Elements of Rhetoric for a text-book. Numerous exercises and revisions familiarize the students with the essentials of neat, legible, clear, and forcible manuscript.

Third Year.—A term's study of higher Rhetoric is occupied with the principles of clear explanation and convincing argument, as well as the outlines of sound criticism. This is followed by a term spent in the history of English language and literature, with abundant illustrations from the best authors. Students are lead in this way to appreciate the power of our mother-tongue, and at the same time to gain a slight acquaintance with the best thoughts of the world. Students are encouraged and directed in the use of the College library, and are under constant oversight in the expression of their thoughts in writing. Original declamations, carefully prepared, and delivered before the students and Faculty, make a part of the drill in the higher classes.

HISTORY AND POLITICAL ECONOMY.—The elements of United States History occupy a term's study in the first year ; and special attention is given to the form and growth of the government under which we live.

In the fourth year, a careful study of the Constitution of the United States is made to show the general principles of government, its means and methods, illustrated by historical references. A single term is given to the study of general history in outline, with especial emphasis upon the world's progress in science, literature and art.

The study of Political Economy in a full term of the fourth year, gives a fair presentation of subjects connected with production, distribution and consumption of wealth. Pains is taken to compare conflicting views, and point out sources of information on all sides of vexed questions without bias or prejudice.

Books of Reference.—Bancroft's United States, Hume's, Macaulay's and Greene's England, Guizot's Civilization, and a good library in general history. In Political Economy, works of Adam Smith, Mill, Fawcett, Cairnes, Walker, Bowen, Carey, and Thompson.

LOGIC AND PHILOSOPHY.—The art of reasoning correctly is aided by a study of systematic logic, both deductive and inductive. Special prominence is given to methods for exact observation and experiment, and correct principles of classification. The previous researches and experiences of the student are made to illustrate these principles.

A short course in Psychology gives the general principles of intellectual and moral philosophy. Perception, understanding, reason, feelings and volition, are topics of explanation and analysis. Theories of right and wrong, and correct principles of action, are made the basis of a clear understanding of individual rights and duties.

Books of Reference.—Mill's, Jevon's and Fowler's Logic, Bascom's Psychology, Porter's Human Intellect, Fairchild's Moral Philosophy, Cousin's The True, the Beautiful and the Good, and works of Spencer, Hamilton and others.

SPECIAL HYGIENE.—To the ladies of the fourth year, a course of daily lectures is given by the lady superintendent of the sewing-room, upon the laws of life and health. The course continues through the entire term, and covers questions pertaining to personal health and the health of the household, such as food, air, exercise, clothing, temperature of rooms, etc.

HOUSEHOLD ECONOMY.—A series of lectures, accompanied by practical illustration in the kitchen laboratory, continues through a term and a half. These cover the general ground of economical provision for the household,—marketing, cooking, preserving, order, neatness and beauty in table service, comfort of family, and care of a sick-room. These are supplemented by the lectures upon Household Chemistry and Dairying.

INDUSTRIAL ARTS.—The training in these departments is designed to be systematic and complete in each, so that any student following a single line diligently through a four-years' course, gains the essentials of a trade and reasonable skill. Those who wish only a general acquaintance with these arts, can take shorter courses in several of them; but all are to select with definite purpose. In the regular course for farmers, agriculture and

horticulture both are required as industrials during definite periods connected with their study: certain terms of practice in the carpenter shop are also essential to readiness upon the farm. These will be adjusted to each other as improved facilities and larger classes require.

Young ladies are required to give the necessary time for practice in the kitchen laboratory, and are expected to show some facility in the practice of the sewing-room, though other industrials may occupy their course. Telegraphy and printing are open to ladies, without fees.

In agriculture and horticulture, the practice is made to illustrate and emphasize the teaching, and covers essentially the same ground. Training in the other arts is as follows:—

Carpentry, etc.—All are enrolled as carpenters, and take the same first lessons in sawing, planing and dressing lumber, making mortises, tenons and joints, and in general use and care of tools. Later, one who chooses a trade is provided with work directly in the line chosen, while the farmer's course provides for general training in a great variety of operations, rather for ingenuity than for skill. In the full course of a carpenter, special instructions are given in the whole range of work, from the framing to the stair-building. Students are allowed, after attaining sufficient skill, to work upon their own materials, under the advice of the superintendent.

Printing.—Two courses are pursued in this art. In one the student is given a general view of the rise and progress of printing, of type-founding, stereotyping, electrotyping, and lithography. He is taught the implements or tools employed in typography, and how to use them; composition; imposition; principles and practice in plain and ornamental job work; presses and their workings; technical terms; and general duties of a first-class workman. The second course, the lessons of which alternate with those in the first, embraces instruction in spelling, capitalization, punctuation, proof-reading and correcting; preparation of essays and criticisms on the same; and such other miscellaneous work as will make the student accurate and expert in language.

The *INDUSTRIALIST*, published weekly by this department, furnishes an admirable drill to all, but especially to those who take the full course. The printing for different departments of the College gives to the advanced student an excellent drill in plain and ornamental job work.

Books of Reference.—MacKellar's *American Printer*, Harpel's *Typograph*, Wilson's *Punctuation*, Rounds' *Printers' Cabinet*, Ringwalt's *Encyclopeedia of Printing*, and all standard works on grammar and rhetoric.

Telegraphy.—The course of training involves for beginners the characters that compose the alphabet, and combinations of these characters into words and sentences,—attention being paid to spelling and to short and precise expression in messages,—abbreviations, signals, forms of messages, train orders, reports, etc. To the more advanced is given regular line business; as, press reports, messages, cypher messages, and orders in all forms used by prominent telegraph companies, together with the necessary

book-keeping, upon exact copies of the blanks in actual use. One day in each week is devoted to instruction in the use and management of lines, batteries, instruments, etc. The elementary principles of electricity, magnetism, and electro-magnetism, involved in telegraphy, are taught and illustrated by experiments. The more rapid modes of telegraphy, including duplex, quadruplex, and the telephone, are explained.

Books of Reference.—Prescott's Electric Telegraph, Morse's Examination of Telegraphic Apparatus, Culley's Telegraphy, Pope's Hand-book of the Telegraph.

Sewing.—Young ladies are taught in all ordinary forms of sewing with needle and machine, and in cutting, fitting and trimming dresses and other garments. They may furnish materials and work for their own advantage during the hour of practice, under the direction of the superintendent.

Instrumental Music.—Provision is made for the teaching of music upon instruments of all sorts. The College furnishes piano and organ for practice, but the teacher depends upon his pupils for his income. Lessons may be weekly or semi-weekly, and all practice at the College must be under the direction of the teacher. Weekly lessons are sixty cents each; semi-weekly, fifty cents each. Students in a class of two or more can receive instruction at reduced rates, as the number may warrant. Harmony and composition are taught if desired.

LABOR.

The course of study is framed with especial reference to the wants of laboring men and women; and every encouragement is given to habits of daily manual labor during the College course. Only the one hour of daily practice in the industrial departments is required, but students are encouraged to make use of other opportunities for adding to their ability and means. The labor needed by the College, in farm, garden, shops and offices, is for the most part performed by students, at average wages of eight cents an hour. The shops and offices are open in vacant hours for the accommodation of skilled students in work for their own advantage. Students are employed frequently upon the neighboring farms and in the city. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

All labor at the College is under the direction of the superintendents of departments, and offers opportunity for increasing skill and efficiency. In regular monthly settlements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed. A few students who have shown especial efficiency are employed during the summer vacation.

GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character by both precept and example, and expected "upon honor" to maintain a good repute. Failure to do so is met by prompt dismissal. No other rules and regulations are announced.

REGULAR EXERCISES.—*Classes* are in session every week-day except Saturday, and no student may be absent without excuse. A full and permanent record of attendance, scholarship and deportment, shows to each student his standing in the College. After each monthly examination, a report of advancement is made to parents; and any student, upon leaving College, may receive a certificate of standing.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Lectures, etc.—Twice in each month the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third and fourth year classes. On alternate weeks, all the classes meet at the same hour, in separate class-rooms, for exercises in elocution and correct expression.

Every Friday evening a students' prayer-meeting is held in the College Society-room, lead by a member of the Faculty. On the Sabbath, students are expected to attend services at least once in the different churches of the city.

Occasionally during each term, the College Building is opened for a social gathering of Faculty and students, in which music, literary exercises and friendly greeting find place.

VOCAL MUSIC.—Excellent instruction in vocal music, for beginners and for advanced students, is furnished at a very slight expense, under the direction of Prof. J. E. Platt, with whom all arrangements for entering these classes may be made. Each class has two lessons a week.

SOCIETIES.—There are two prosperous literary societies of nearly ten years' standing. Both have libraries, and meet weekly in their own room in Societies' Hall. The *Alpha Beta* is open to students of both sexes, and holds its meetings Friday afternoon. The *Webster* admits to membership gentlemen only, and meets on Saturday evening.

Members of the Faculty, with students of the third and fourth years, have a Scientific Club, which meets in the Chemical Laboratory on the first Friday evening of each month.

The Central Kansas Stock-breeders' Association and the Manhattan Horticultural Society have monthly meetings,—usually at the College,—which the students have the privilege of attending.

MEANS OF ILLUSTRATION.

TWO FARMS of 155 and 100 acres. Eighty-five acres in crops; thirty acres in tame grasses; sixty-five acres in prairie pasture and mowing land of native grasses. Samples of special crops and experimental plots.

A WELL-PLANNED BARN for grain, hay, horses and cattle; and a pig-gery of ten pens, with separate yards.

SHORT-HORN AND JERSEY CATTLE; Berkshire and Essex swine.

FARM IMPLEMENTS.

ORCHARDS, containing apples, peaches, pears, plums, cherries and apricots, of many varieties.

SMALL-FRUIT garden with varieties of blackberries, raspberries, gooseberries, currants and strawberries; and vineyard with fifteen varieties of grapes.

FOREST PLANTATION of five acres, containing twenty varieties of trees of from ten to fifteen years' growth.

ORNAMENTAL GROUNDS, set with a variety of evergreen and deciduous trees. Sample rows of ornamental and useful shrubs and herbs, labeled.

VEGETABLE GARDEN with hot-beds, cold-frame, and experimental beds. Practice rows for students' budding, grafting, cultivating, and pruning.

CHEMICAL LABORATORY, with six rooms, fitted with tables and apparatus for forty students; also, physical apparatus and meteorological instruments.

MATHEMATICAL INSTRUMENTS, models for drawing, and charts for illustration.

CABINETS OF MINERAL AND GEOLOGICAL SPECIMENS; and growing collections in botany, entomology and zoology, with some interesting illustrations of ethnology.

COLLECTIONS of grains, grasses, and forage plants, and of native and foreign woods.

CARPENTER SHOP, with separate benches and tools for twenty students in each class, besides lathe, mortising machine, scroll-saws and general chest of tools for fine work.

SHOP FOR IRON WORK, with forges, vices, drill, etc.

PRINTING OFFICE, with twenty-five pairs of cases, a good assortment of type, and a half-medium Gordon press.

TELEGRAPH OFFICE, with two and one-half miles of line, connecting branch offices, and twenty instruments.

SEWING ROOMS, with four machines.

KITCHEN LABORATORY, with range, cooking and table utensils.

MUSIC ROOMS, with pianos, organ, and other instruments.

LIBRARY AND READING ROOM, open daily, containing some 3,000 volumes and 150 periodicals.

ADMISSION.

Candidates for admission at the beginning of the year, in September, must be at least fourteen years of age, and able to pass a satisfactory examination in reading, spelling, writing, arithmetic to percentage, geography, and elements of English grammar. Those applying later in the term must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of the term, in order to advance with the classes from the first.

Applicants for advanced standing in the course must pass examination in all the previous studies of the class to be entered; but, if they have pursued such studies in other institutions of similar rank, they may receive credit for their standing in those institutions upon presenting a certificate from the proper officer.

The following questions in arithmetic may serve as a sample of the usual examinations for admission: —

1. Multiply 281,216 by 97.8.
2. Divide 4,024,156 by 890.3.
3. Add $\frac{3}{5}$, $\frac{4}{7}$, $\frac{13}{21}$, and $\frac{7}{15}$.
4. From a barrel containing $36\frac{1}{8}$ gallons, $8\frac{7}{8}$ gallons were drawn: how many remain?
5. What will be the cost of $9\frac{3}{8}$ bushels of corn at $28\frac{2}{3}$ cents a bushel?
6. Divide $\frac{3}{5}$ by $\frac{6}{7}$.
7. Multiply 4 and 25 thousandths by 36 ten thousandths.
8. Divide 42.035 by 2.15 decimally to the third decimal place in quotient.
9. How many barrels, each holding 2 bushels and 3 pecks, will be needed to contain 880 bushels of apples?
10. How many cords in a pile of four-foot wood, five feet six inches high and twenty-three feet long?

EXPENSES.

Tuition is free, and no charges are made for incidental or "contingent" expenses.

Students in chemistry pay for chemicals used by them in their laboratory practice and analysis, at cost prices.

Young men who take printing or telegraphy for their industrial, pay one dollar a month for the use of office and instruments. Young ladies are furnished these free, these two offices with the sewing and the cooking departments being provided especially for their industrial education.

All other instruction furnished by assignment to classes is without expense to the student, beyond the necessary text-books. These can be procured at Manhattan, at a cost of from two to five dollars a term.

Lessons in instrumental music are from fifty to sixty cents each, or from five to twelve dollars a term, according to the number of lessons.

Vocal music is taught in classes, at an average expense of one dollar a term.

Board and washing are not furnished by the College. Board can be procured in private families at from \$2.75 to \$3.50 per week, and in some boarding houses for \$1.50 per week. Some students board themselves at even less cost; and rooms for that purpose can be obtained at a rent of from \$1.50 to \$2.50 a month. Washing costs from fifty cents to one dollar a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$60 to \$150 a year.

EARNINGS.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for, unless the student is employed—outside of required hours of labor—upon work for the profit of the College. Some students are so employed upon the farm, in the gardens or the shops, and about the buildings. This labor, in limited quantities, is paid for at rates varying with service rendered, from seven to ten cents an hour. The superintendents strive to adjust their work to the necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit, and the increasing extent of the grounds and sample gardens brings more of such labor.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. Students employed in the shops are allowed to work somewhat for their own profit, in the manufacture of articles for sale or use. In these ways, a few students are able to earn their way through College. The amount so earned will vary with the taste and zeal of the student. The majority must expect to provide by earnings outside of term-time, or from other sources, for the larger part of their expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education, if he has the ability to use his opportunities well.

COLLEGE BUILDINGS.

The old Bluemont College and Boarding Hall, situated one mile west of the College grounds, are now devoted to students' rooms. The other buildings, all of Manhattan limestone, answer the following description, the numbers referring to the plate facing the title-page:—

1. College, of which the north wing only is completed. This wing is two stories high, 52 by 108 feet in outside dimensions, and contains class-rooms for Practical Agriculture, Drawing, Mathematics and English, the Library, the President's office, and waiting rooms.

2. Chemical Laboratory, one story high, 36 by 99 and 46 by 75 feet, in form of a cross. It contains eight rooms, occupied by the Chemical Department, the Kitchen Laboratory, and the Printing-office.

3. Mechanics' Hall, 39 by 103 feet, of two stories, occupied by the Carpenter shop and finishing room, Telegraph office, Sewing rooms, and Music rooms.

4. Horticultural Hall, 32 by 80 feet, one story and cellar, with cabinet-room, class-room, work-room and storage.

5. Dwelling of the President.

6. Societies' Hall, 46 by 96 feet, of two stories. It was originally designed for a barn, but is now used for the Chapel, the Society room, the dwelling of the Farm Superintendent, and rooms for the janitor and for a few students.

The Barn is of stone, 48 by 90 feet, with side-hill basement stables, granary, tool-room, etc.

The blacksmith shop, piggery, implement shed, and other out-buildings, are of wood.

CALENDAR.

1880-81.

September 9th, College Year begins. Examinations for admission at 8:30 A. M.

December 17th, Fall Term ends.

January 3d, Winter Term begins. Examinations for admission at 2 P. M.

March 25th, Winter Term ends.

March 28th, Spring Term begins.

June 5th to 8th, Annual Examinations and Anniversaries.

June 8th, 10 A. M., Commencement.

1881-2.

September 8th, College Year begins. Examinations for admission at 8:30 A. M.

Board of Regents.

1863 TO 1880.

1863	Hon. G. W. Collamore,	1863
1863	Hon. D. P. Lowe, Fort Scott,	1864
1863	Hon. A. Spaulding,	1864
1863	Hon. W. F. Woodworth,	1866
1863	Judge J. Pipher, Manhattan,	1868
1863	Judge L. D. Bailey, Lawrence,	1869
1863	Hon. S. D. Houston, Concordia,	1869
1863	Rev. J. G. Reaser,	1869
1863	Hon. T. H. Baker,	1870
1863	Rev. R. Cordley, Emporia,	1871
1863	Hon. Thomas Carney, Governor of State, <i>ex officio</i> ,	1865
1863	Hon. W. W. H. Lawrence, Secretary of State, <i>ex officio</i> ,	1865
1863	Hon. I. T. Goodnow, State Sup't Public Instruction, <i>ex officio</i> ,	1867
1863	Rev. J. Denison, President of the College, <i>ex officio</i> ,	1873
1865	Rev. E. Gale, Manhattan,	1871
1865	Rev. D. Earhart,	1871
1865	Hon. S. J. Crawford, Governor of State, <i>ex officio</i> ,	1868
1865	Hon. R. A. Barker, Secretary of State, <i>ex officio</i> ,	1869
1867	Rev. P. McVicar, State Sup't of Public Instruction, <i>ex officio</i> ,	1871
1868	Hon. E. C. Manning, Winfield,	1870
1868	Rev. Chas. Reynolds, Fort Riley,	1874
1868	Hon. N. Green, Governor of State, <i>ex officio</i> ,	1869
1869	Hon. B. J. F. Hanna, Salina,	1873
1869	Hon. John McClenahan, Ottawa,	1873
1869	Hon. O. J. Grover, Savannah,	1873
1869	Hon. J. M. Harvey, Governor of State, <i>ex officio</i> ,	1873
1869	Hon. Thomas Moonlight, Secretary of State, <i>ex officio</i> ,	1871
1870	Rev. R. D. Parker, Manhattan,	1873
1870	Hon. H. J. Strickler, Tecumseh,	1873
1870	Hon. Alfred Gray, Quindaro,	1873
1870	Hon. Geo. W. Higinbotham, Manhattan,	1873
1871	Rev. L. Sternberg, Fort Harker,	1873
1871	Hon. Joshua Wheeler, Pardee,	1873
1871	Hon. Thos. A. Osborn, Governor of State, <i>ex officio</i> ,	1873
1871	Hon. W. H. Smallwood, Secretary of State, <i>ex officio</i> ,	1873
1871	Hon. H. D. McCarty, State Sup't Public Instruction, <i>ex officio</i> ,	1873

1873	Hon. N. Green, Stockdale,	1874
1873	Hon. J. K. Hudson, Topeka,	1875
1873	Hon. Josiah Copley, Perryville,	1875
1873	Hon. James Rogers, Burlingame,	1876
1873	Hon. N. A. Adams, Manhattan,	1878
1873	Rev. Jno. A. Anderson, President of the College, <i>ex officio</i> ,	1879
1874	Hon. Charles E. Bates, Marysville,	1874
1874	Hon. J. H. Folks, Wellington,	1877
1874	Hon. B. L. Kingsbury, Burlington,	1879
1875	Hon. M. J. Salter, Thayer,	1877
1875	Hon. J. Lawrence, Beloit,	1878
1876	Hon. A. H. Horton, Atchison,	1877
1877	Hon. J. R. Hallowell, Columbus,	1879
1877	Hon. T. C. Henry, Abilene,	1880
1877	Hon. Stephen M. Wood, Elmdale,	
1878	Hon. L. J. Best, Beloit,	1878
1878	Hon. W. L. Challiss, Atchison,	
1879	Hon. E. B. Purcell, Manhattan,	
1879	Hon. D. C. McKay, Ames,	
1879	Hon. A. L. Redden, Eldorado,	
1879	Rev. Geo. T. Fairchild, President of the College, <i>ex officio</i> ,	
1880	Hon. A. J. Hoisington, Great Bend,	

SECRETARIES OF BOARD.

1863	Regent T. H. Baker,	1870
1870	Regent R. D. Parker,	1873
1873	Prof. E. Gale,	1873
1873	Wm. Burgoyne,	1874
1874	Regent N. A. Adams,	1878
1878	Pres. Jno. A. Anderson,	1879
1879	Regent T. C. Henry,	1879
1879	Pres. Geo. T. Fairchild,	

TREASURERS OF BOARD.

1863	J. Pipher,	1870
1870	E. B. Purcell,	

LAND AGENTS.

1866	I. T. Goodnow,	1873
1873	L. R. Elliott,	

LOAN COMMISSIONERS.

1870	E. Gale,	1878
1878	M. L. Ward,	

Faculty.

1863 TO 1880.

PRESIDENTS.

1863	Joseph Denison,	1873
1873	John A. Anderson,	1879
1879	Geo. T. Fairchild,	

SECRETARIES.

1864	J. E. Platt,	1871
1871	Lizzie J. Williams,	1873
1873	J. E. Platt,	

PROFESSORS.

PRACTICAL AGRICULTURE.

1866	J. W. Hougham (Agricultural and Commercial Science),	1872
1870	Fred E. Miller,	1874
1872	H. J. Detmers (Veterinary Science and Animal Husbandry),	1874
1874	Edward M. Shelton,	

BOTANY AND HORTICULTURE.

1870	E. Gale (Horticulture),	1876
1876	E. Gale,	1878
1878	H. E. VanDeman,	1879
1879	Edwin A. Popenoe,	

NATURAL HISTORY.

1863	J. G. Schnebly (and Agricultural Chemistry),	1865
1865	B. F. Mudge (with Mathematics until 1870),	1874
1874	J. S. Whitman (Botany, Entomology and Geology),	1876

CHEMISTRY AND PHYSICS.

1874	Wm. K. Kedzie,	1878
1878	Geo. H. Failyer,	

MATHEMATICS.

1863	N. O. Preston (and English Literature),	1866
1866	J. E. Platt (and Vocal Music),	1873
1873	M. L. Ward (and English),	

LANGUAGE AND LITERATURE.

1866	J. H. Lee (Ancient Classics),	1874
1874	J. H. Lee (English Language and History),	1875
1869	Miss Mary F. Hovey (German),	1872
1873	J. E. Platt (Elementary English and Mathematics),	

MILITARY SCIENCE AND TACTICS.

1866	Gen. J. H. Davidson,	1870
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SUPERINTENDENTS.

FARM.

1870	Fred E. Miller,	1874
1874	Edward M. Shelton,	

GARDENS, ORCHARDS, Etc.

1870	E. Gale,	1878
1878	H. E. VanDeman,	1879
1879	Edwin A. Popenoe,	

SHOPS.

1871	Ambrose Todd,	1878
1878	T. T. Hawkes,	

PRINTING.

1874	A. A. Stewart,	
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TELEGRAPHY.

1873	Frank C. Jackson,	1874
1874	Walter C. Stewart,	1879
1879	I. D. Graham,	

SEWING.

1874	Mrs. H. C. Cheseldine,	1875
1875	Mrs. M. E. Cripps,	

INSTRUCTORS.

1872	Miss Jennie Detmers (Chemistry and German),	1873
1875	Mrs. M. L. Ward (French and German),	1876

DRAWING.

1870	Miss Lizzie J. Williams,	1876
1876	Mrs. Ella M. Kedzie,	1877
1877	John D. Walters,	

INSTRUMENTAL MUSIC.

1863	Mrs. Ella C. Beckwith,	1864
1864	C. Hubschman,	1866
1866	Mrs. Laura C. Lee,	1868
1868	Miss Emily M. Campbell,	1869
1869	Mrs. Hattie V. Werden,	1877
1877	Miss Carrie Steele,	1878
1878	Wm. L. Hofer,	

LECTURERS.

Dr. John A. Warder (Horticulture and Pomology), 1871.
 Joseph Rushman (Veterinary Science), 1871.
 Charles V. Riley (Economic Entomology), 1876.
 D. J. Brewer (Practical Law), 1875-1877.

PREPARATORY DEPARTMENT.

1864	J. E. Platt (Principal),	1866
1864	Miss Belle M. Haines (Assistant),	1864

Graduates.



1867.

Henry L. Denison, A. B., Denver, *Colorado*.
 Belle M. Haines *Pond*, A. B., Topeka.
 Emma L. Haines *Bowen*, A. B., Wabaunsee.
 John J. Points, A. B., Omaha, *Nebraska*.
 Martha A. White *Abbott*, A. B., Manhattan.

1871.

Emily M. Campbell *Robinson*, A. B., (died in 1877).
 Ellen F. Denison *Wheedon*, A. B., . . . Lincoln, *Nebraska*.
 Luella M. Houston, A. B., Concordia.
 Charles O. Wheedon, B. S., Lincoln, *Nebraska*.
 Kate E. White *Turley*, A. B., Manhattan.

1872.

Theophania M. Haines *Huntington*, A. B., (died in 1879).
 Albert Todd, A. B., Lieut. U. S. A., . . . Fortress Monroe, *Virginia*.
 Wendell S. Williston, A. M. in 1875, . . . New Haven, *Connecticut*.

1873.

Eliza Z. Davis *Stringfield*, A. B., San Luis O'bispo, *California*.
 Samuel Kimble, A. B., Manhattan.

1874.

Harry A. Brous, A. B., Philadelphia, *Pennsylvania*.
 Edgar F. Clark, A. B., Manhattan.
 John E. Davis, B. S., La Fayette, *Indiana*.
 William D. Gilbert, A. B., Atchison.
 A. Judson White, A. B., Fairfield, *Iowa*.

1875.

Reuben E. Lofinck, B. S., Manhattan.
 Alice E. Stewart, A. B., Manhattan.

1876.

George A. Gale, A. B., Milford.
 Ella M. Gale *Kedzie*, A. B., Manhattan.
 Nellie Sawyer, A. B., Ottawa.
 Carrie M. Kimball, A. B., Manhattan.
 Minerva E. Whitman, A. B., Lyndon.

1877.

- Ella S. Child, B. S., Manhattan.
 Geo. H. Failyer, M. S. in 1879, Manhattan.
 John S. Griffing, M. S. in 1880, Topeka.
 Walter C. Howard, B. S., Scranton.
 Fredrick O. Hoyt, B. S., Chicago, *Illinois*.
 Louis E. Humphrey, B. S., Milford.
 James F. LaTourrette, B. S., Red River Springs, *N. M.*
 Marion F. Leasure, B. S., La Cygne.
 William Ulrich, M. S. in 1879, Manhattan.

1878.

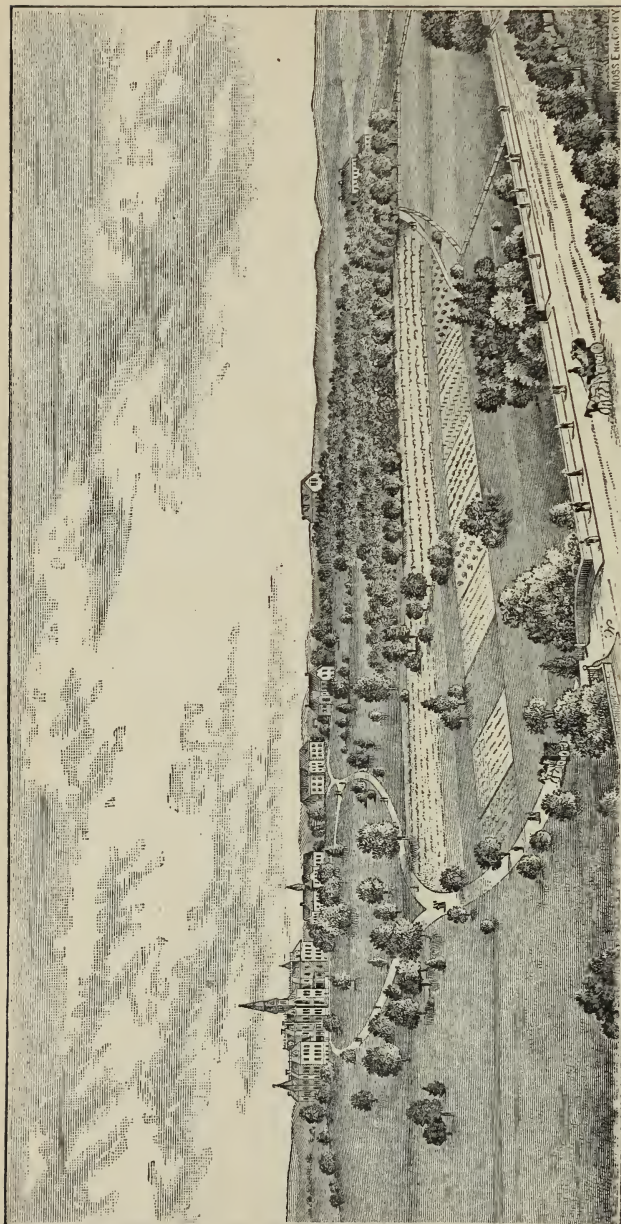
- Amos E. Wilson, B. S., Solomon City.
 George L. Platt, B. S., (died in 1878).
 Charles S. McConnell, B. S., Manhattan.
 Albert N. Godfrey, M. S. in 1880, Eureka.

1879.

- Arthur T. Blain, B. S., Manhattan.
 Ettie Campbell, B. S., Manhattan.
 Wilmer K. Eckman, B. S., Osborne City.
 Corvin J. Reed, B. S., St. Clere.
 Harry C. Rushmore, B. S., Onaga.
 William H. Sikes, B. S., Garrison.
 Lewis A. Salter, B. S., Thayer.
 Ella Vincent, B. S., Manhattan.
 Clarence E. Wood, B. S., Manhattan.

1880.

- Augustine Beacham, B. S., Irving.
 Lizzie R. Cox, B. S., Manhattan.
 Emma Hoyt, B. S., Lawrence.
 Emma Knostman, B. S., Manhattan.
 Grace Parker, B. S., Manhattan.
 Noble A. Richardson, B. S., Guilford.
 Maria E. Sickels, B. S., Schell City, *Missouri*.



KANSAS STATE AGRICULTURAL COLLEGE.
For description see page 31.



NINETEENTH

ANNUAL CATALOGUE

OF THE

OFFICERS AND STUDENTS

OF THE

State Agricultural College

OF

KANSAS.

1881-82.

MANHATTAN, KANSAS:
PRINTING DEPARTMENT, AGRICULTURAL COLLEGE.
1882.

Board of Regents.

HON. STEPHEN M. WOOD, of Elmdale, Chase Co.,
President of the Board.

HON. A. J. HOISINGTON, of Great Bend, Barton Co.,
Vice-President.

HON. D. C. MCKAY, of Ames, Cloud Co.,
Treasurer.

HON. A. L. REDDEN, of El Dorado, Butler Co.,
Attorney.

HON. JNO. ELLIOT, of Manhattan, Riley Co.

HON. V. V. ADAMSON, of Holton, Jackson Co.

PRESIDENT GEO. T. FAIRCHILD (*ex officio*),
Secretary.

L. R. ELLIOT, <i>Land Agent</i> ,	} Manhattan, Riley Co.
M. L. WARD, <i>Loan Commissioner</i> ,	

Faculty.

GEORGE T. FAIRCHILD, A. M., PRESIDENT,
Professor of Logic and Political Economy.

MILAN L. WARD, A. M.,
Professor of Mathematics and English, Librarian.

EDWARD M. SHELTON, M. S.,
Professor of Practical Agriculture, Superintendent of Farm.

GEORGE H. FAIRYER, M. S.,
Professor of Chemistry and Physics.

EDWIN A. POPENOE, A. M.,
*Professor of Botany and Zoology, Superintendent of Orchards
and Gardens.*

JEREMIAH E. PLATT, A. M.,
Professor of Elementary English and Mathematics.

ALBERT TODD, A. M., LIEUT. 1ST U. S. ART'Y,
Professor of Military Science and Tactics.

JOHN D. WALTERS,
Instructor in Industrial Drawing.

TIMOTHY T. HAWKES.
Superintendent of Workshops.

GEORGE F. THOMPSON,
**Acting Superintendent of Printing.*

IRA D. GRAHAM,
Superintendent of Telegraphy, Secretary.

MRS. MARY E. CRIPPS,
Teacher of Household Economy and Hygiene, Superintendent of Sewing.

WILLIAM L. HOFER,
Teacher of Instrumental Music.

*Vice A. A. Stewart, resigned October 1st, 1881.

WIRT S. MYERS, B. S.,

Foreman of Farm.

AARON WINDER,

Foreman of Gardens.

STUDENT ASSISTANTS.

JULIUS T. WILLARD, *Chemistry.*

MARK A. REEVE, *Carpentry.*

JOHN LINDER, *Blacksmithing.*

Students.

FOURTH YEAR.

J. Chester Allen, *Beloit, Mitchell.
Ida Cranford, Brookville, Saline.
Edward V. Cripps, Manhattan, Riley.
William J. Griffing, Manhattan, Riley.
Warren Knaus, Buffalo, Wilson.
Mattie E. Mails, Blue, Pottawatomie.
Allie S. Peckham, Manhattan, Riley.
Mark A. Reeve, Americus, Lyon.
Belle Selby, Garnett, Anderson,
Burton L. Short, Crestline, Cherokee.
John A. Sloan, Wakefield, Clay.

THIRD YEAR.

James W. Berry, Jewell City, Jewell.
Mary C. Bower, Manhattan, Riley.
Lewis W. Call, Wild Cat, Riley.
William A. Corey, Plowboy, Shawnee.
Henry M. Cottrell, Wabaunsee, Wabaunsee.
Phœbe E. Haines, Manhattan, Riley.
Rudolph A. Hollenberg, Hanover, Washington.
George E. Hopper, Downs, Osborne.
Hortense L. Houston, Manhattan, Riley.
Jacob Lund, Alma, Wabaunsee.
Charles Marlatt, Manhattan, Riley.
Katie I. Meguire, Manhattan, Riley.
Charles Messenger, Baltimore, Cowley.
Dana J. Needham, Lane, Franklin.
Amy E. Noyes, Pavilion, Wabaunsee.
Hattie L. Peck, Junction City, Davis.
Helen M. Short, Crestline, Cherokee.
George F. Thompson, Baltimore, Cowley.
Milan T. Ward, Orion, Henry Co., *Illinois*.

*Postoffice and county. State in italics.

SECOND YEAR.

Edwin C. Anderson,	Manhattan, Riley.
Emert S. Andress,	Hanover, Washington.
Rachel M. Bayles,	Manhattan, Riley.
Frank W. Bevington,	Jewell City, Jewell.
Charles M. Branch,	Sterling, Rice.
George H. Brown,	Wakefield, Clay.
Grace A. Brown,	Manhattan, Riley.
John H. Calvin,	Manhattan, Riley.
Clara F. Castle,	Newbury, Wabaunsee.
George W. Cotton,	Rural, Jefferson.
Carrie F. Donaldson,	Manhattan, Riley.
Florence A. Donaldson,	Manhattan, Riley.
Frank W. Dunn,	Goshen, Elkhart Co., <i>Indiana</i> .
Edwin M. Fairchild,	Manhattan, Riley.
Edward J. Fairhurst,	Canton, McPherson.
I. Day Gardiner,	Wakarusa, Shawnee.
Lydia P. Gardiner,	Wakarusa, Shawnee.
Mary Griffing,	Manhattan, Riley.
Lanson B. Harvey,	West Mansfield, Logan Co., <i>Ohio</i> .
Emma Harvey,	Vinton, Riley.
Abraham L. Helmick,	Hico, Benton Co., <i>Arkansas</i> .
Eli A. Helmick,	Hico, Benton Co., <i>Arkansas</i> .
Cora Hunting,	Manhattan, Riley.
Jenny Hurlbut,	Oswego, Labette.
Franklin A. Hutto,	Manhattan, Riley.
Carrie Jones,	Wabaunsee, Wabaunsee.
Horace B. Jones,	Wabaunsee, Wabaunsee.
Edwin H. Kern,	Ionia, Jewell.
George C. Keyes,	Wabaunsee, Wabaunsee.
Samuel A. Kinney,	Salem, Richardson Co., <i>Nebraska</i> .
Issie Lewis,	Manhattan, Riley.
Marion M. Lewis,	Stockdale, Riley.
Clarence I. Limbocker,	Manhattan, Riley.
John Linder,	Manhattan, Riley.
Anna A. Marshall,	Manhattan, Riley.
George G. McConnell,	Menoken, Shawnee.
James W. McDonald,	Manhattan, Riley.
Laura Meacham,	Manhattan, Riley.
William H. Meek,	Galva, McPherson.
Grace R. Meeker,	Ottawa, Franklin.
Orlando G. Palmer,	Alma, Wabaunsee.
George C. Peck,	Junction City, Davis.
Roscius K. Peck,	Junction City, Davis.
Elias L. Pound,	Manhattan, Riley.

Dorothea E. Secrest,	Randolph, Riley.
George K. Shanks,	Wabaunsee, Wabaunsee.
John W. Shartel,	Fulda, Chautauqua.
Albert E. Smith,	Washington, Washington.
Jerome Stuart,	Manhattan, Riley.
William C. VanFossen,	Leavenworth, Leavenworth.

FIRST YEAR.

John Q. Adams,	Washington, Washington.
James V. Aikins,	Hoyt, Jackson.
James B. Ainsworth,	Ocheltree, Johnson.
Mary M. Akin,	Manhattan, Riley.
Valdy V. Akin,	Manhattan, Riley.
Ulysses G. Allen,	Ocheltree, Johnson.
George F. Anderson,	Manhattan, Riley.
John B. Anderson,	Manhattan, Riley.
Luella A. Anderson,	Manhattan, Riley.
William D. Auld,	Frankfort, Marshall.
Cyrus D. Austin,	Melvern, Osage.
Dustin Avery,	Wakefield, Clay.
Edwin B. Bacheller,	Esthira, Rush.
Charles F. Bailey,	Weir City, Cherokee.
Julia E. Baker,	Cuba, Republic.
George H. Barnes,	Manhattan, Riley.
Thomas Bassler,	Philadelphia, <i>Pennsylvania</i> .
Herbert W. Batchellor,	Wakefield, Clay.
Elmer E. Bates,	Rural, Jefferson.
Jennie W. Baty,	Chetopa, Labette.
William F. Bayles,	Garrison, Pottawatomie.
Clifton Berry,	Atchison, Atchison.
Ada B. Bishop,	Clay Center, Clay.
Inez M. Bishop,	Delphos, Ottawa.
Charles E. Boyer,	WaKeeney, Trego.
Jasper E. Brady, Jr.	Leavenworth, Leavenworth.
John J. Breakbill,	Manhattan, Riley.
Irene Bridgman,	Atchison, Atchison.
Lillie B. Bridgman,	Atchison, Atchison.
George A. Browning,	Manhattan, Riley.
Walter W. Buck,	Oskaloosa, Jefferson.
Victor H. Calvin,	Manhattan, Riley.
Henry R. Campbell,	Sabetha, Nemaha.
Harmon C. Caster,	Manhattan, Riley.
Emory W. Caywood,	Vining, Washington.
William Chadwick,	Circleville, Jackson.

Frank B. Chapin,	Medicine Lodge, Barbour.
Clarence E. Cheney,	Abilene, Dickinson.
Walter P. Chisum,	Roswell, Lincoln Co., <i>New Mexico.</i>
William J. Chisum,	Roswell, Lincoln Co., <i>New Mexico.</i>
Charles Clark,	Minneapolis, Ottawa.
Waldo E. Clark,	Junction City, Davis.
Ernest B. Coffman,	Mankato, Jewell.
Cory E. Conklin,	Thompsonville, Jefferson.
Jabez A. Cooper,	Wild Cat, Riley.
William E. Cooper,	Wild Cat, Riley.
Riley W. Coran,	Fort Scott, Bourbon.
Annie M. Cowell,	Wakefield, Clay.
Judson H. Criswell,	Manhattan, Riley.
Minnie H. Currie,	Garrison, Pottawatomie.
John T. Curtis,	Ogden, Riley.
Edwin J. Davies,	Bala, Riley.
Lizzie J. Davies,	Bala, Riley.
Albert Deitz,	Kansas City, Wyandotte.
DeWitt L. Dever,	Manhattan, Riley.
Olive M. Dever,	Manhattan, Riley.
Florence Dibble,	Topeka, Shawnee.
Charles P. Downing,	Beaumont, Butler.
Robert H. Drummond,	Woodhull, Chase.
William M. Ellis,	Minerva, Labette.
Ida Failyer,	Sedan, Chautauqua.
Paul H. Fairchild,	Manhattan, Riley.
Clarence Fairman,	Wakefield, Clay.
Elizabeth Fentem,	Wakefield, Clay.
Alpheus D. Fink,	Jewell City, Jewell.
Ida M. Flagg,	Manhattan, Riley.
Henry L. Flemming,	Koloko, Washington.
James M. Fowler,	Medina, Jefferson.
Linna A. Gahan,	Manhattan, Riley.
Edward A. Gildemeister,	Council Grove, Morris.
George A. Giles,	Irving, Marshall.
Joseph T. Gist,	Manhattan, Riley.
Joseph W. Gray,	Eureka, Greenwood.
William Griffith,	North Topeka, Shawnee.
William E. Gross,	Salina, Saline.
Frederick W. Guy,	Wakefield, Clay.
Abraham L. Hampton,	Coal Creek, Ottawa.
Percy S. Haynes,	Rockville, Bates Co., <i>Missouri.</i>
Legrand F. Hazelton,	Wilmington, Will Co., <i>Illinois.</i>
Jessie E. Heathman,	Sigel, Douglas.
Charles L. Helmick,	Hico, Benton Co., <i>Arkansas.</i>
Florence N. Herrick,	Tabor, Clay.
Mary Hinman,	Manhattan, Riley.
Sophia Hollenberg,	Hanover, Washington.

Charles J. Hooper,	Silver Cliff, Custer Co., <i>Colorado</i> .
George L. Horning,	Grantville, Jefferson.
Henry J. Horning,	Grantville, Jefferson.
Belle Hoskins,	Junction City, Davis.
Florence F. Hough,	Melrose, Monroe Co., <i>Iowa</i> .
John G. S. Hubbard,	Caton, Steuben Co., <i>New York</i> .
Phillip A. Huber,	Meriden, Jefferson.
Edgar M. Hutto,	Manhattan, Riley.
Willis W. Hutto,	Manhattan, Riley.
Carrie V. Ingraham,	Manhattan, Riley.
Eva H. Ingraham,	Manhattan, Riley.
Marlow W. Ingraham,	Manhattan, Riley.
Decimus A. James,	Honiton, Devonshire, <i>England</i> .
William D. Jemison,	Solomon Rapids, Mitchell.
David R. Jenkins,	Bala, Riley.
Marvin Jenkins,	Ottawa, Franklin.
Charles B. Jennings,	North Topeka, Shawnee.
Salathiel D. Johnson,	Virgil, Greenwood.
William C. Johnston,	Hoyt, Jackson.
Emma Jones,	Wabaunsee, Wabaunsee.
Arthur B. Kauffman,	Garnett, Anderson.
Frederick G. Kimball,	Manhattan, Riley.
Harry A. Kinney,	Hamlin, Brown.
Ione M. Kinney,	Hamlin, Brown.
Albert E. Kopp,	North Topeka, Shawnee.
Marcus Krotzer,	Manhattan, Riley.
Albert E. LaMaster,	Gardner, Johnson.
William C. Lee,	Manhattan, Riley.
Allan Lewis,	Topeka, Shawnee.
William L. Lewis,	Stockdale, Riley.
Cora B. Long,	Ellsworth, Ellsworth.
Georgia I. Long,	Ellsworth, Ellsworth.
Frederick A. Marlatt,	Manhattan, Riley.
Warren Marshall,	Zeandale, Riley.
Willis Marshall,	Zeandale, Riley.
Clarence H. Martin,	Globe, Douglas.
William E. Martin,	Ogden, Riley.
Jessie F. McDonald,	Manhattan, Riley.
John A. McElroy,	Eureka, Greenwood.
John C. McElroy,	Alma, Wabaunsee.
Kate McKeage,	Hoyt, Jackson.
William B. McKeage,	Hoyt, Jackson.
Thomas McKee,	Havensville, Pottawatomie.
Gilbert J. Mears,	Eskridge, Wabaunsee.
Martial Metz,	Manhattan, Riley.
James Miller,	El Dorado, Butler.
Richard Miller,	Valley Falls, Jefferson.
Thomas W. Miller,	Peach Grove, Clay.

Alfred H. Monroe,	Chicago, <i>Illinois</i> .
Frederick H. Monroe,	WaKeeney, Trego.
Mary E. Moses,	Manhattan, Riley.
Nellie J. Murphy,	Tabor, Clay.
James R. Naylor,	Tecumseh, Shawnee.
William Neal,	Beloit, Mitchell.
Thomas W. Nicol,	Poplar Hill, Dickinson.
Mary Noland,	Manhattan, Riley.
Arthur L. Noyes,	Pavilion, Wabaunsee.
Eugene O'Keefe,	Maria, Leavenworth.
William B. O'Malley,	Hanover, Washington.
John J. Osborn,	Galva, McPherson.
James Owens,	Marion, Henry Co., <i>Missouri</i> .
Solon M. Paddleford,	Stockdale, Riley.
Alexander W. Paddock,	Antelope, Marion.
Henry P. Paddock,	Antelope, Marion.
Louis B. Parker,	Manhattan, Riley.
Anna Patterson,	Manhattan, Riley.
Andrew W. Patterson,	Granby, Newton Co., <i>Missouri</i> .
Seward N. Peck,	Junction City, Davis.
Ida Pence,	North Topeka, Shawnee.
Henry C. Peoples,	Eskridge, Wabaunsee.
Asa D. Perrigo,	Hartford, Lyon.
Edward H. Perry,	Manhattan, Riley.
Clarence T. Pilkenton,	WaKeeney, Trego.
Emory M. Platt,	Manhattan, Riley.
Finie Points,	Havensville, Pottawatomie.
Julia E. Points,	Havensville, Pottawatomie.
Willis L. Pomeroy,	Parallel, Riley.
Lillie Popenoe,	Lawrence, Douglas.
Susie B. Popenoe,	Lawrence, Douglas.
Clarence D. Pratt,	Silver Lake, Shawnee.
Malvina E. Pratt,	Silver Lake, Shawnee.
Lizzie Pressnall,	Washington, Washington.
Ada H. Quinby,	Wakefield, Clay.
Ida A. Quinby,	Wakefield, Clay.
Horace Randall,	Fort Union, Mora Co., <i>New Mexico</i> .
Robert P. Reckards,	Thompsonville, Jefferson.
Elmer J. Reed,	Strawberry, Washington.
Rollin R. Rees,	Minneapolis, Ottawa.
Dewain Rice,	Delphos, Ottawa.
Horace M. Robbins,	St. John, Stafford.
Elmer Romick,	Manhattan, Riley.
Winfield S. Romick,	Solomon City, Dickinson.
Euna B. Royal,	Salt City, Sumner.
Cassius C. Russell,	Wakefield, Clay.
John A. Sandberg,	Randolph, Riley.
Harry M. Scneider,	North Cedar, Jackson.

Andrew A. Sebring,	Bismarck, Wabaunsee.
Charles H. Sheffield,	Glasco, Cloud.
Walter C. Short,	Oneida, Nemaha.
Albin Smercheck,	Blue Rapids, Marshall.
Carlos E. Smith,	Plowboy, Shawnee.
Edgar L. Smith,	Washington, Washington.
Frank M. Smith,	Rosevale, Clay.
Linna E. Snyder,	Salt City, Sumner.
George G. Strong,	Wild Cat, Riley.
Annie M. Stout,	Grove City, Jefferson.
John F. Stricker,	Martinsville, Clark Co., <i>Illinois</i> .
Joseph W. Stricker,	Havensville, Pottawatomie.
Charles E. Sweet,	Topeka, Shawnee.
Ella M. Tennant,	Manhattan, Riley.
Harry O. Tennant,	Manhattan, Riley.
Isaac Thackrey,	Manhattan, Riley.
Charles J. F. Thompson,	Virgil, Greenwood.
Florence Thompson,	Virgil, Greenwood.
George H. Thompson,	Howard, Elk.
William O. Thompson,	Baltimore, Cowley.
Henry P. Tipton,	Maria, Leavenworth.
Thomas J. Towery,	Roswell, Lincoln Co., <i>New Mexico</i> .
Walter M. Trevor,	Detroit, <i>Michigan</i> .
Lester K. VanHorne,	Larned, Pawnee.
Dwight C. VanNice,	Edgerton, Johnson.
William R. VanTuyt,	Fairmount, Leavenworth.
Clyde W. Votaw,	Manhattan, Riley.
Ella S. Walden,	Manhattan, Riley.
William S. Walden,	Manhattan, Riley.
Julius Ward,	Peterton, Osage.
Austin S. Warr,	Eureka, Greenwood.
Lucy Waters,	Vinton, Riley.
Sherman Waters,	Vinton, Riley.
Minnie Werry,	Salina, Saline.
Wesley R. Wharton,	Burlington, Coffey.
Beatrice B. White,	Manhattan, Riley.
William E. White,	Independence, Montgomery.
Bertha E. Whitney,	Manhattan, Riley.
William W. Wightman,	Logan, Phillips.
Clara V. Willits,	Grove City, Jefferson.
Flora H. Willits,	Grove City, Jefferson.
David Wishart,	Pawnee City, Pawnee Co., <i>Nebraska</i> .
Grace Wonsetler,	Verbeck, Barton.
George M. Woodhead,	Grove City, Jefferson.
Effie E. Woods,	Randolph, Riley.
John H. Wormald,	Wakefield, Clay.
Maggie A. Young,	Stanley, Johnson.

SPECIAL COURSE.

Lester T. Boutwell, *Pharmacy*, Wakefield, Clay.
 Carrie G. Holcomb, *Natural Sciences*, Topeka, Shawnee.
 Mary Huselby, *Music and Sciences*, Omio, Jewell.
 Silas C. Mason, *Natural Sciences*, Delphos, Ottawa.
 Julius T. Willard, *Chemistry*, Wabaunsee, Wabaunsee.

NUMBER OF STUDENTS.

Classes:—	Gentlemen.	Ladies.	Total.
Fourth Year,	7	4	11
Third Year,	12	7	19
Second Year,	34	16	50
First Year,	168	59	227
Special Course,	3	2	5
Total,	222	88	312

From 54 counties of Kansas, 288

From 13 other States, 24

Average age of students, 19.35 years.

TERMS AND VACATIONS.

FALL TERM, 1882.

Thursday, September 14th.—College year begins. Examination for admission at 9 A. M.

Friday, October 20th, and November 17th.—Monthly examinations.

Thursday and Friday, December 21st and 22d.—Examinations at close of Fall Term.

December 23d to January 7th.—Winter vacation.

WINTER TERM, 1883.

Tuesday, January 9th.—Winter Term begins. Examinations for admission, 9 A. M.

Friday, February 16th.—Monthly examinations.

Thursday and Friday, March 29th and 30th.—Examinations at close of Winter Term.

SPRING TERM, 1883.

Monday, April 2d.—Spring Term begins.

Friday, May 4th.—Monthly Examinations.

Monday and Tuesday, June 11th and 12th.—Examinations at close of the year.

June 10th to 13th.—Exercises of Commencement week.

Wednesday, June 13th, 10 A. M.—Commencement.

June 14th to September 12th.—Summer vacation.

FALL TERM, 1883.

Thursday, September 13th.—College year begins. Examination for admission at 9 A. M.

Objects and Methods.

ENDOWMENT.

An act of Congress, approved July 2d, 1862, gave to each State public lands to the amount of 30,000 acres for each of the Senators and Representatives in Congress according to the census of 1860, for the "endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, * * * in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

Under this act, the State of Kansas received 82,313.53 acres of land, and, in 1863, established the State Agricultural College, by endowing with these lands Bluemont College, which had been erected near Manhattan under the auspices of the M. E. Church, but was presented to the State for the purpose named in the act of Congress. Of these lands, 64,878.29 acres are now sold, giving a fund of over \$340,000, which is by law invested in bonds, the interest alone being used for current expenses of the College. There remain unsold 18,435.24 acres of land, lying in Riley, Dickinson, Washington and Marshall counties, appraised at about \$140,000.

In 1873 the College was reorganized upon a thoroughly industrial basis, with prominence given to practical agriculture and related sciences; and, in 1875, the furniture and apparatus of the College were moved to buildings upon the farm of 155 acres, one mile nearer the city of Manhattan. On this fine location, the State has erected buildings valued at \$70,000, of which a description is given elsewhere.

OBJECTS.

This College now proposes to carry out the objects of its endowment in several ways.

First, it gives a substantial education to men and women, in all the walks of life. Such general information and discipline of mind and character as help to make intelligent and useful citizens are offered in all its departments, while the students are kept in sympathy with the callings of the people.

Second, it teaches the sciences applied to the various industries of farm, shops and home. Chemistry, botany, entomology, zoölogy and

mechanics are made prominent means of education to quick observation and accurate judgment. Careful study of the minerals, plants and animals themselves illustrates and fixes the daily lesson. At the same time, lessons in agriculture and horticulture show the application of science; and both are enforced by actual experiment.

Third, it trains in the elements of the arts themselves, and imparts such skill as makes the hands ready instruments of thoughtful brains. The drill of the shops, gardens and farm is made part of a general education to usefulness, and insures a means of living to all who make good use of it. At the same time, it preserves habits of industry and manual exertion, and cultivates a taste for rural and domestic pursuits.

Fourth, it strives to increase our experimental knowledge of agriculture and horticulture. So far as means and circumstances permit, experiments are undertaken with a view to more definite results than ordinary experience can give. By this method, the students themselves are trained to a more accurate observation and judgment in these practical tests of principles in farming.

Fifth, it seeks to disseminate such practical truths as have stood the test of scientific inquiry. For this purpose it publishes the weekly *INDUSTRIALIST*; and its officers share in the debates and consultations of farmers and horticulturists throughout the State.

Each winter a series of six Farmers' Institutes is held in as many different counties of the State. In these the Faculty share with the people of the place in the needed provision for lectures, essays and discussions upon topics of most interest to farmers.

COURSES OF STUDY.

The necessity for so adjusting various branches of a course of study that there shall be as little waste as possible in acquiring both information and discipline is felt by every teacher. Such a course is not designed to be absolutely inflexible, but to guide the judgment into some definite line of progress from which no mere whim shall turn a student aside.

Each student is expected to take three studies beside one hour's practice in an industrial art; and variation from this rule can be made only with consent of the Faculty.

Parallel courses are offered to both sexes, with such differences as their necessities seem to call for. The following gives the general scope of the two; but fuller explanations are found under *OUTLINE OF INSTRUCTION*:—

FIRST YEAR.

FALL TERM.—Arithmetic.

English Analysis.

Geometrical Drawing.

Industrial.

WINTER TERM.—Book-keeping.
English Structure.
United States History.
Industrial.

SPRING TERM.—Algebra.
English Composition.
Botany, with Drawing.
Industrial.

SECOND YEAR.

FALL TERM.—Algebra completed.
Elementary Chemistry.
• Horticulture.
Fourteen lectures in Military Science.
Industrial.

WINTER TERM.—Geometry.
Practical Agriculture or Household Economy.
Organic Chemistry and Mineralogy.
Twelve lectures in Military Science.
Industrial.

SPRING TERM.—Geometry completed, with Drawing.
Entomology and Anatomy.
Analytical Chemistry.
Farming and Gardening or Dairying.

THIRD YEAR.

FALL TERM.—Trigonometry and Surveying.
Physiology.
General History.
Farming and Gardening.

WINTER TERM.—Mechanics.
Agricultural Chemistry.
Rhetoric.
Industrial.

SPRING TERM.—Civil Engineering, with Drawing.
Chemical Physics.
English Literature.
Industrial.

FOURTH YEAR.

FALL TERM.—Agriculture or Hygiene and Dairying.
Meteorology.
Psychology.
Industrial.

WINTER TERM.—Logic, Deductive and Inductive.
Zoölogy.
Structural Botany.
Industrial.

SPRING TERM.—Geology.
United States Constitution.
Political Economy.
Industrial.

CLASS HOURS, 1882-3.

	HOURS	FIRST YEAR.	SECOND YEAR.	THIRD YEAR.	FOURTH YEAR.
FALL TERM, 14 WEEKS.	I.	Arithmetic.	Algebra.	Industrials.	Agriculture. Literature.
	II.	Geometrical Drawing.	Horticulture.	Physiology.	Meteorology.
	III.	English Analysis.	Industrials.	General History.	Psychology.
	IV.	Industrials.	Inorganic Chemistry.	Trigonometry and Surveying.	
	V.	Military Drill, (Optional).	Chemical Prac- tice once a week. Military Science.	Special Industrials.	Industrials.
WINTER TERM, 12 WEEKS.	I.	Book-keeping.	Agriculture.	Agricultural Chemistry.	Zoology.
	II.	Military Drill, (Optional).	Geometry.	Industrials.	Logic.
	III.	Industrials.	Organic Chemis- try 6 weeks. Mineralogy.	Rhetoric.	
	IV.	U. S. History.	Military Science 6 weeks. Blow- pipe Analysis.	Mechanics.	Structural Botany.
	V.	English Structure.	Household Economy.		Industrials.
SPRING TERM, 11 WEEKS.	I.	Algebra.	Entomology 7 weeks. Anatomy 3 weeks	English Literature.	Geology.
	II.	Botany.	Geometry with Drawing.	Chemical Physics.	Political Economy.
	III.	Industrials.	Analytical Chemistry.	Industrials.	U. S. Constitution.
	IV.	Drawing 3 days, Drill 2 days, each week.	Analytical Chemistry.	Civil Engineering. Hygiene.	
	V.	Composition.	Special Industrials.	Drawing twice a week.	Industrials.

All students meet in Chapel at half-past eight o'clock each morning, except Saturday and Sunday. The time from 8:50 A. M. to 1 P. M. is divided into five "hours," as above; and a system of electric bells calls the classes in all the buildings at once. Public exercises or class rhetorical exercises on every Friday afternoon, at 1:30.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among these lines of training, each student may select, with the approval of the Faculty. Young men may have Agriculture, Horticulture, Carpentry, Cabinet-making, Iron-work, Printing or Telegraphy. Young ladies may take Sewing, Printing, Telegraphy, Music or Scroll-sawing.

Military Drill is optional.

SPECIAL COURSES.—Persons of suitable age and advancement, who desire to pursue such branches of study as are most directly related to agriculture or other industries, may select such studies, under the advice of the Faculty. Assaying and Pharmaceutical Chemistry may be provided for by special arrangement, when students are qualified to pursue them.

POST-GRADUATE COURSES.—Arrangements can be made for advanced study in the several departments at any time. Special opportunities for investigation and research will be afforded to resident graduates.

DEGREES.

The degree of Bachelor of Science is conferred upon students who complete the full course of four years and sustain all the examinations.

The degree of Master of Science is conferred upon graduates of three years' standing who give evidence of advancement in the application of science to the arts of practical life, and present an acceptable thesis upon some topic assigned by the Faculty.

OUTLINE OF INSTRUCTION.

PRACTICAL AGRICULTURE.—*Second Year.*—History of agriculture, showing the successive steps by which the art has attained its present position. History and characteristics of breeds; their adaptation to the varying conditions of soil, climate and situation; study of the forms of animals, as shown by the different breeds belonging to the College; the relation of stock raising to general farming. Cultivation of hoed crops; management of corn and roots with reference to stock feeding, and the growth of the finer grains. The growth of the "tame grasses" in Kansas; the best sorts for the State, and their management, as shown by experience on the College farm and elsewhere. Implements of simple tillage; mechanical principles involved in their construction. Application of labor. Draught; different adjustments, as affecting draught. Use of the dynamometer. Plows for soil and subsoil. Drainage; soils that need draining; how to lay out a system of drains.

Fourth Year.—General principles governing the development of domestic animals. The laws of hereditary disease,—of normal, abnormal

and acquired characters; atavism; correlation in the development of parts; in-and-in breeding and cross breeding; influences affecting fecundity. The selection and arrangement of the farm with reference to the system to be pursued. Rotation of crops; general advantages of a rotation; the best rotation for the distribution of labor, production of manure, and extermination of weeds; planning farm buildings,—barns, piggeries and stables. Manure,—how best housed and applied; composting; commercial fertilizers. Agricultural experiments; field and feeding experiments. Stock feeding and meat production; stall-feeding; soiling. In this, Miles' Stock Breeding is supplemented by a course of lectures.

Books of Reference.—Journals of the Royal Agricultural Society of England, Morton's Cyclopedia, Low's Practical Agriculture and Domesticated Animals, Fleming's Veterinary Obstetrics, Ribot on Heredity, Farmers' Calendar, Allen's American Farm-book, The Complete Grazier, Stephens' Book of the Farm, Thomas' Farm Implements, Waring's Draining for Profit and Health, the reports of our own and other State boards of agriculture, and Shorthorn, Jersey and Berkshire Herd-books.

HORTICULTURE.—It is the aim to teach this art from a botanical basis. The student applies his knowledge of the prime facts in botanical physiology to the various operations of the nursery, orchard and garden. Barry's Fruit Garden is used, supplemented by a series of lectures upon the following topics, among others: The Scope of Horticulture. General principles of propagation,—by buds, by seeds. Production of improved varieties,—by careful selection of seeds, by interfertilization of known kinds. Perpetuation of valuable sorts of fruits by bud propagation,—budding, grafting, layering, etc. The important points in nursery manipulation. The orchard; conditions of site, soil, exposure, elevation. Special treatment of different kinds of fruit trees. Pruning. Gathering and storing fruits. Small-fruit culture; lists of varieties suitable for Kansas planting. Vegetable garden; selection and preservation of seeds; planting and transplanting. The management and use of the hot-bed and cold-frame. Forest plantations. Wind-breaks. Hedges. Trees and shrubs for ornamental planting.

Books of Reference.—The horticultural works of Downing, Warden, Fuller, Thomas, Loudon, Henderson, and other standard authorities. The Horticultural Reports of the States of Kansas, Michigan, Illinois, and others. In Landscape Gardening, the works of Downing, Weidenmann, Kemp.

BOTANY.—During the course, two terms are given to the study of Botany.

Elementary Botany.—In the spring term, first year, the student is familiarized with the basis and aims of botanical classification to a sufficient degree to enable him to appreciate differences and resemblances in the plant kingdom, and is made acquainted with the salient

points in plant physiology. Gray's Manual and Lessons is the text-book.

Advanced or Higher Botany.—In the spring term, fourth year, the intimate structure of plants, a more detailed study of plant physiology, (in the germination of seed, the growth of cellular substance, and the fertilization of the ovule), variation, the improvement of varieties, parasitic fungi, are among the topics studied. The text-book used in this part of the course is Bessey's Botany. This study is made more practical by the use of the compound microscopes belonging to the Department, of which there are five, with suitable accessories for a high grade of work.

Although it is in a large degree the aim of this course in Botany to furnish a foundation for the study of applied botany in agriculture and horticulture, the advantages of systematic observation and original investigation are kept in view, and the student anticipates the use of the text-book by the use of his eye and brain,—observing and comparing seeds, leaves, stems, flowers, and other portions of plants, keeping notes of his observations for presentation in the class. This plan is followed through the course, with each new topic. A good herbarium, a small well-stocked greenhouse, and a series of charts, are used as means of illustration.

Books of Reference.—A few well-selected books, including the works of Gray, Don, Loudon, Darwin, Cooke, Berkeley, Lesquereux, Eaton, Sullivant, Paxton, and others of note.

CHEMISTRY.—*Inorganic Chemistry*, which occupies fourteen weeks of the second year, includes a consideration of chemical forces and of the laws of chemical combination, with nomenclature and formulæ, and a careful study of the history, manufacture, physical, chemical and physiological properties, tests and uses, of the various elements and their compounds. Especial attention is given to those substances having extended application in the arts. In addition to the usual lecture-room experiments, the student repeats, as far as practicable, all this experimental work at his private work-table.

Organic Chemistry comprises a six weeks' course of lectures upon the theory of organic types and compound radicals, and the preparation and properties of those organic substances most useful to man.

In *Chemical Analysis*, each student has his stand in the Qualitative Laboratory, completely furnished with apparatus and chemicals for his own use. His work includes the analysis of more or less complex mixtures of chemicals, minerals, ores, soils, mineral waters, well waters, etc. The time given to this work is two hours daily for eleven weeks. Text-book, Kedzie's Manual.

AGRICULTURAL CHEMISTRY.—This includes a thorough consideration of the application of chemical principles to the economy of the farm; the origin and formation of soils; the classification and composition of soils; the analysis of soils, and their adaptation to purposes of

production; the composition and use of manures; composting; chemistry of farm operations;—such as plowing, fallowing, draining; chemistry of plant growth. Text-book, Johnson's "How Crops Feed."

Books of Reference.—In general chemistry, Roscoe, Schorlemmer, Miller, and Storer. In applied chemistry, Paul & Pagen, and Muspratt. In Chemical Analysis, Fresenius, Thorpe, Cairne, Blythe, Prescott and Wanklyn; Sutton's Volumetric Analysis, Crooke's Select Methods. Reports of experiment stations, current scientific journals.

MINERALOGY AND GEOLOGY.—For six weeks in the second year, two hours a day are given to mineralogy. This includes the study of crystallography, with the properties, forms and uses of the principal minerals of the United States. Blow-pipe analysis forms an important part of the course, each student being required to name and identify a large series of minerals. Text-book, Dana's Mineralogy and Lithology.

A term's study in the fourth year gives a view of the causes which have produced geologic changes in the past, of the general arrangement of the earth's crust, and of special peculiarities of various strata. Attention is given to the formation of soils and deposits of valuable minerals, especially in Kansas. Text-book, Dana's Geologic Story.

Books of Reference.—Dana's System of Mineralogy, Dana's Manual of Geology, LeConte's Geology, Elderhorst's Blow-pipe Analysis.

PHYSICS AND METEOROLOGY.—Two terms' work give an opportunity for experimental study of the laws of heat, light, electricity and magnetism, the constitution of the atmosphere, the measurement of temperature and humidity, atmospheric pressure. Text-books, Miller's Chemical Physics and Loomis' Meteorology. This course also includes a careful study of instruments and methods employed in taking meteorological observations.

Books of Reference.—The works of Deschanel, Ganot, Pyncheon, Tyndall, Faraday, Helmholtz, Grove, and others.

ANATOMY AND PHYSIOLOGY.—A full term's study of Physiology is preceded by a course of lectures on Anatomy. In this course, such consideration will be given to the form, structure and location of the different organs as is required for the proper comprehension of Physiology and Hygiene; and, in addition, the external form of animals, particularly the ox and horse, will be studied by the class as a preparation for the study of Stock breeding. The study of Physiology embraces a thorough consideration of the functions of the organs of the human body, and the relations these sustain to the conditions of health and disease. Among the principal topics discussed, these may be mentioned: foods and digestion; assimilation; secretion and excretion; the circulation of the blood; the nervous system; the special senses; reproduction. Text-book, Martin's Human Body.

Books of Reference.—Dalton's Human Physiology, Carpenter's Treatise on Human Physiology, Flint's Physiology of Man, Gray's Anatomy.

SPECIAL HYGIENE.—To the ladies of the third year, a course of daily lectures is given by the lady Superintendent of the sewing room, upon the laws of life and health. The course extends over a period of ten weeks, and covers questions pertaining to personal health and the health of the household,—such as food, air, exercise, clothing, temperature of rooms, etc.

ENTOMÖLOGY.—This science is studied with especial reference to its economic relations with agriculture and horticulture. A brief course in the principles of classification is followed by a more extended study of the life-history of beneficial and injurious insects, and means of encouragement of one and the control of the other. Here, as in botany, the student is lead to form a basis for the study by his own observations. The instruction is presented in the form of lectures. Illustrations are furnished from the individual collections of the students, and from the entomological collections belonging to the College. Charts and drawings from nature are used to illustrate points of value in classification.

Books of Reference.—Packard's Guide to the Study of Insects, Harris' Insects Injurious to Vegetation, Riley's Reports, LeBaron's Reports, Fitch's Reports, Thomas' Reports, Reports of the U. S. Entomologist, Transactions of the American Entomological Society, and others.

ZOÖLOGY.—In this study Packard's Zoölogy has been adopted as a text-book. The intention of the course is to familiarize the student with the characters of some type in each class, and then by comparative study, with the chief modifications of the type chosen. Especial attention is directed to comparative anatomy and physiology, as underlying all logical classification. A good collection of animals, birds, reptiles and fishes, both mounted and alcoholic, a small but rapidly increasing collection of invertebrates in alcohol, and a fine collection of conchological specimens, are among the means of illustration. Dissection and work with microscope accompany the study, so far as practicable.

Books of Reference.—A selection of standard works, including those of Coues, Wilson, Cuvier, Baird, Agassiz, Jordan, Allen, Darwin, Verrill, Smith, Packard, Wallace, and many others.

ARITHMETIC.—One term is given to a general review of Brooks' Union Arithmetic, the greater part of the time being spent on percentage and its applications. Accuracy and rapidity in computations are required; and, to those deficient in this respect, a thorough drill is given. Original problems, involving the every-day life of students, form a prominent feature of the course.

BOOK-KEEPING.—Beginning with a simple cash account, book-keeping is developed through all the principles of single and double entry. Each student provides a full set of blanks, and keeps a regular set of books, in which accuracy of calculation and posting, and neatness of execution, are regarded as essential as correct understanding of the

principles. No text-book is used; but all forms and problems are furnished in the class-room, and frequent reference is made to the standard works of Mayhew and Duff.

In addition to this term's work in Book-keeping, a course of fifteen lectures in Commercial Law is given.

ALGEBRA.—Algebra is studied two terms. The first is wholly given to the literal notation. The student is thoroughly drilled in the fundamental rules, as applied to whole, fractional and exponential quantities. The second term is devoted to the various forms of the equation, and its applications. The equation in its various forms,—simple, quadratic, radical, etc.,—is studied, as an instrument for solving the problems of practical life, in which quantity is an item; for demonstrations of geometrical and trigometrical theorems; and for the construction of formulas for the use of the engineer and artisan. Text-book, Newcomb's Algebra. Three things are aimed at in the course of Algebra: first, to train the pupil to methods of reasoning; second, to give facility in methods of operation; third, to secure expertness in the use of algebraic formulas

GEOMETRY.—Two terms are given to Geometry. In geometrical drawing, the student has already become familiar with geometrical forms and their construction. The first term is devoted to plane geometry. During the second term, solid and spherical geometry are studied in connection with technical drawing. Practical problems, involving the principles demonstrated, are given to the class. Text-book, Olney's Elements. Hand-books of engineering and of various arts are used for reference.

TRIGONOMETRY AND SURVEYING.—The principles of plane trigonometry, involved in mensuration and surveying, are first mastered. Surveying includes theory; adjustment and use of instruments; history and methods of U. S. Government surveys; areas of land; dividing land; retracing old lines; platting; topographical surveying; railroad surveying; leveling,—section and cross section; computation of earth-work; field practice with transit, compass, chain, level and rod; drawing and ornamentation of plans and profiles. Text-book, Ray's Trigonometry and Surveying.

MECHANICS AND ENGINEERING.—A careful consideration of the laws of motion and force, as exhibited in all kinds of machines and various phenomena of nature, occupies a single term. Another term is given to proper study of materials for buildings, their construction and durability; forms of roofs and bridges; and care and use of machinery. Text-books, Peck's Mechanics, Mahan's Civil Engineering.

DRAWING.—This study is taught four terms, two of which are in the first, one in the second, and one in the third year. Students that show special aptitude in this direction are permitted to pursue the study during the remainder of the course.

First Term.—Definitions of lines and geometrical figures; judging and measuring lines and angles; construction of perpendiculars to given lines, of triangles, four-sided figures and polygons, of the circle and its secant lines, of ellipses, and various geometrical ornaments. Prof. Walter Smith's four books on geometrical drawing are used as text-books.

Second Term.—Freehand drawing accompanying botany. After the study of Nos. 3, 4 and 5 of Prof. Walter Smith's Text-books of Art Education, drawing from nature is taken up. Leaves, flowers and fruits are taken as subjects, and placed in such positions that the perspective will not interfere seriously with a correct perception of form. Each student is required to finish a set of drawings. Lectures on principles and history of ornamentation are given occasionally.

Third Term.—Projection of straight lines and circles; use of drawing board, T-square, and water colors; principles of shades and shadows; principles of parallel and angular perspective; principles of topographical drawing.

Fourth Term.—Projection of the conic sections and other regular curves; intersections of geometrical solids. Each student is required to draw and color a set of plans for a simple farm building, and another set of plans giving details of some farm machine.

Books of Reference.—Warren's Descriptive Geometry, Walter Smith's Manuals on Art Education, Woodward's National Architect, Guild's American Stair-builder, Andre's Hand-book of Topographical Drawing, Davies' Shades and Shadows.

ENGLISH LANGUAGE AND LITERATURE.—*First Year.*—The study of English Grammar is made to serve directly in clear perception and correct expression. Such practice in analysis and parsing as may give the pupils a clear idea of the English sentence in all its parts is associated with daily exercises in expression and criticism. Under English Structure is included a careful study of words and their elements, —roots, stems, prefixes and suffixes. The most fruitful roots from the Saxon, Latin and Greek are learned, and also the laws governing changes in the letters of roots in forming derivatives. Six lectures are given upon the origin and history of the English language. At the same time, the daily exercises are made a means of training in exact articulation, spelling, writing, and the essentials of good reading. Text-books, Reed & Kellogg's Higher English Lessons, Swinton's Word Analysis.

Principles and methods in English Composition are then taken up, with David J. Hill's Elements of Rhetoric for a text-book. Numerous exercises and revisions familiarize the students with the essentials of neat, legible manuscript, and clear, forcible expression.

Each class meets once every fortnight for drill in elocution and composition.

Third Year.—A term's study of Higher Rhetoric is occupied with

the principles of clear explanation and convincing argument, as well as the outlines of sound criticism, as presented in A. S. Hill's *Rhetoric*. This is followed by a term spent in the history of English language and literature, with abundant illustrations from the best authors. Students are led in this way to appreciate the power of our mother-tongue, and at the same time to gain a slight acquaintance with the best thoughts of the world. Students are encouraged and directed in the use of the College library, and are under constant oversight in the expression of their thoughts in writing. Original declamations, carefully prepared and delivered before the students and Faculty, make a part of the drill in the higher classes.

In the course for young ladies the first term of the fourth year gives training in the elements of criticism and good taste by some of the most famous works in English Literature.

HISTORY AND POLITICAL ECONOMY.—Ridpath's *United States History* occupies a term's study in the first year; and special attention is given to the form and growth of the government under which we live. In the fourth year, a careful study of the *Constitution of the United States*, with Cooley's *Principles of Constitutional Law* as a text-book, is made to show the general principles of government, its means and methods, illustrated by historical references. A single term is given to Swinton's *Outlines of General History*, with especial emphasis upon the world's progress in science, literature and art.

The study of *Political Economy*, in a full term of the fourth year, gives a fair presentation of subjects connected with production, distribution and consumption of wealth. Chapin's *Wayland's Elements* is the text-book; but pains is taken to compare conflicting views, and point out sources of information on all sides of vexed questions, without bias or prejudice.

Books of Reference.—Bancroft's *United States*, Hume's, Macaulay's and Greene's *England*, Guizot's *Civilization*, and a good library in general history. In *Political Economy*, works of Adam Smith, Mill, Fawcett, Cairnes, Walker, Bowen, Carey and Thompson.

HOUSEHOLD ECONOMY.—A series of lectures to ladies of the second-year class, accompanied by practical illustration in the kitchen laboratory, continues through a term of twelve weeks. These cover the general ground of economical provision for the household,—marketing, cooking, preserving, order, neatness and beauty in table service, comfort of family, and care of a sick room.

LOGIC AND PHILOSOPHY.—The art of reasoning correctly is aided by a study of systematic logic, both deductive and inductive. Special prominence is given to methods for exact observation and experiment, and correct principles of classification. The previous researches and experiences of the student are made to illustrate these principles. Text-book, Jevon's *Elements of Logic*.

A short course in *Psychology* gives the general principles of intellectual and moral philosophy. Perception, understanding, reason, feel-

ing and volition, are topics of explanation and analysis. Theories of right and wrong, and correct principles of action, are made the basis of a clear understanding of individual rights and duties. Hopkins' Outline Study of Man forms the basis of the course.

Books of Reference.—Mill's, Jevon's and Fowler's Logic, Bascom's Psychology, Porter's Human Intellect, Fairchild's Moral Philosophy, Cousin's The True, The Beautiful and The Good, and works of Spencer, Hamilton, and others.

INDUSTRIAL ARTS.—The training in these departments is designed to be systematic and complete in each, so that any student, following a single line diligently through a four years' course, gains the essentials of a trade and a reasonable degree of skill. Those who wish only a general acquaintance with the arts can take shorter courses in several of them; but all are to select with definite purpose. In the regular course for farmers, agriculture and horticulture both are required as industrials during definite periods connected with their study: certain terms of practice in the carpenter shop are also essential to readiness upon the farm. These will be adjusted to each other as improved facilities and larger classes require.

Young ladies are required to give the necessary time for practice in the kitchen laboratory, and are expected to show some facility in the practice of the sewing room, though other industrials may occupy their course.

Dairying.—During the spring term, daily instruction and practice in the different branches of dairying will be given the ladies of the second year by the Professor of Agriculture. Arrangements have been made for fitting up, at an early day, a dairy well equipped with improved appliances for the manufacture of butter and cheese. The course of instruction given on this subject will embrace the following and cognate subjects: dairy products as human food; influences affecting the quality and quantity of milk; the factory system, and household plans of cheese making; butter making; creameries; "deep" and "shallow" setting systems; packing and preserving butter. The instruction given under the above headings will be enforced by regular and systematic work in the dairy.

Agriculture and Horticulture are required of young men as industrials during one term of the second year and one term of the third year. In these, practice is made to illustrate and emphasize the teaching, and covers essentially the same ground. Every young man thus gains acquaintance with the methods of the College.

Carpentry, etc.—On entering the shops, all are enrolled as carpenters, and take the same first lessons in sawing, planing and dressing lumber, making mortises, tenons and joints, and in general use and care of tools. Later, one who chooses a trade is provided with work directly in the line chosen; while the farmer's course provides for general training in a great variety of operations, rather for ingenuity than for skill. In the full course of a carpenter, special instructions are given

in the whole range of work, from framing to stair building. Students are allowed, after attaining sufficient skill, to work upon their own materials, under the advice of the Superintendent.

In iron work, instruction is given in ordinary work,—forging, filing, tempering, etc.

Printing.—Two courses are pursued in this art. In one the student is taught the implements or tools employed in typography, and how to use them; composition; imposition; correcting proof; technical terms; presses and their workings; and the general duties of a first-class workman. Every one is encouraged in the study of the rise and progress of printing and related arts. Habits of accuracy and thoroughness are required in order to advancement. The second course of lessons alternates with those in the first, and embraces instruction in spelling, capitalization, syllabication, punctuation, proof-reading, preparation and criticism of essays, and such other work as will make the student accurate and expert in language. Wilson's Punctuation is the text-book; but much of the instruction is oral,—such as grows out of the every-day experiences of the office.

The INDUSTRIALIST furnishes an admirable drill to all, but especially to those who take the full course. The printing which the departments of the College require gives to the advanced student a fair knowledge of the principles and practice of job work.

Books of Reference.—MacKellar's American Printer, Harpel's Typograph, Rounds' Printers' Cabinet, Ringwalt's Encyclopedia of Printing, and standard works on grammar and rhetoric.

Telegraphy.—The course of training involves for beginners the characters that compose the alphabet, and combinations of these characters into words and sentences,—attention being paid to spelling and to short and precise expression in messages,—abbreviations, signals, forms of messages, train orders, reports, etc. To the more advanced is given regular line business; as press reports, messages, cypher messages, and orders in all forms used by prominent telegraph companies, together with the necessary book-keeping, upon exact copies of the blanks in actual use, thus giving the student an understanding of the work of an operator. A portion of the time is devoted to instruction in the use and management of lines, batteries, instruments, etc. The elementary principles of electricity, magnetism and electro-magnetism, involved in telegraphy, are taught and illustrated by experiments. The more recent inventions relating to the art are discussed and explained. Pope's Hand-book of the Telegraph is used as a text-book.

Books of Reference.—Prescott's Electric Telegraph, Morse's Examination of Telegraphic Apparatus, Culley's Telegraphy, and the works of DuMoncel, Clark & Sabine, Davis & Rae, Mandet, Jenkins, Harris, and others.

Sewing.—Young ladies are taught in all ordinary forms of sewing with needle and machine, and in cutting, fitting and trimming dresses and other garments. They may furnish materials, and work for their

own advantage during the hour of practice, under the direction of the Superintendent.

Instrumental Music.—Provision is made for the teaching of music upon instruments of all sorts. A full course upon the organ or piano extends over four years, including harmony and composition; but students may take lessons for a single term if they choose. The College furnishes an instrument for daily practice, but the teacher depends upon his fees for income. The charge is from six to eight dollars a term for weekly lessons, and from ten to fourteen dollars a term for semi-weekly lessons. Students in classes of two or more can obtain reduced rates, as the number may warrant.

MILITARY TRAINING.—During the second year, a course of twenty-six lectures is given. These are designed to show what an army is for, its relation to the country, and, in a general way, to describe its organization and duties.

To those who desire it, an opportunity is given to obtain a fair practice in the ordinary infantry drills, including bayonet exercise. Although drill is thus made optional, students are not allowed to take it for periods shorter than one term. To obtain a proper proficiency, however, one should take the tri-weekly drill for at least a year.

The College battalion is divided into companies, which are officered by students, appointed by the Professor in charge with the approval of the President.

Arms and accoutrements are furnished by the Government, the students being required to keep such as they use in proper condition.

LABOR.

The course of study is framed with special reference to the wants of laboring men and women; and every encouragement is given to habits of daily manual labor during the College course. Only the one hour of daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their ability and means.

The College employs students, when possible, on the farm and in the gardens, shops and offices, paying wages varying in rate with accomplishment from eight to ten cents an hour.

All labor at the College is under the direction of the Superintendents of departments, and offers opportunity for increasing skill and efficiency. In regular weekly settlements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed. A few students who have shown especial efficiency are employed during the summer vacation.

The shops and offices are open afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Stu-

dents are employed frequently upon the neighboring farms and in the city. Everywhere the student who works, wins respect; and it is a matter of pride to earn one's way as far as possible.

GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character by both precept and example, and expected "upon honor" to maintain a good repute. Failure to do so is met by prompt dismissal. No other rules and regulations are announced.

REGULAR EXERCISES.—*Classes* are in session every week-day except Saturday, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship and deportment shows to each student his standing in the College. After each monthly examination, a report of advancement is made to parents; and any student, upon leaving College at the close of a term, may receive a certificate of standing.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Lectures, etc.—Twice in each month the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third and fourth year classes. On alternate weeks, all the classes meet at the same hour, in separate class rooms, for exercises in elocution and correct expression.

Every Friday evening a students' prayer meeting is held in the College Society room, led by a member of the Faculty. On the Sabbath, students are expected to attend services at least once in the different churches of the city.

Occasionally during each term, the College Building is opened for a social gathering of Faculty and students, in which music, literary exercises and friendly greeting find place.

VOCAL MUSIC.—Instruction in Vocal Music, for beginners and for advanced students, is furnished at a very slight expense, under the direction of Prof. Platt, with whom all arrangements for entering these classes may be made. Each class has two lessons a week, at an average expense of one dollar a term.

SOCIETIES.—There are two prosperous literary societies of more than ten years' standing. Both have libraries, and meet weekly in their own room. The *Alpha Beta* is open to both sexes, and holds its meetings Friday afternoon. The *Webster* admits to membership gentlemen only, and meets on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the first Friday evening of each month.

The Central Kansas Stock Breeders' Association and the Manhattan Horticultural Society have monthly meetings,—usually at the College,—which the students have the privilege of attending.

MEANS OF ILLUSTRATION.

TWO FARMS of 171 and 100 acres. Eighty-five acres in crops; thirty acres in tame grasses; Eighty-one acres in prairie pasture and mowing land of native grasses. Samples of special crops and experimental plots in grains, grasses, and forage crops.

A WELL-PLANNED BARN for grain, hay, horses and cattle; and a pigery of ten pens, with separate yards.

SHORTHORN, POLLED ANGUS, OR ABERDEEN, AND GALLOWAY CATTLE; Berkshire and Essex swine.

FARM IMPLEMENTS of improved patterns.

ORCHARDS, containing apples, peaches, pears, plums, cherries and apricots, of many varieties.

SMALL-FRUIT GARDEN, with varieties of blackberries, raspberries, gooseberries, currants and strawberries; and vineyard with fifty varieties of grapes.

FOREST PLANTATION of five acres, containing twenty varieties of trees of from ten to fifteen years' growth.

ORNAMENTAL GROUNDS, set with a variety of evergreens and deciduous trees. Sample rows of ornamental and useful shrubs and trees, labeled.

VEGETABLE GARDEN, with hot and cold frames and experimental beds. Practice rows for students' budding, grafting, cultivating and pruning.

A SMALL GREENHOUSE, with collection of bedding and house plants.

CHEMICAL LABORATORY, with seven rooms, fitted with tables and apparatus for a class of forty students; also, physical apparatus and meteorological instruments.

MATHEMATICAL INSTRUMENTS, models and patterns for drawing, and charts for illustration.

CABINETS OF MINERAL AND GEOLOGICAL SPECIMENS, including collections of Prof. Mudge; and growing collections in botany, entomology and zoölogy, with some interesting illustrations in ethnology.

COLLECTIONS of grains, grasses and forage plants, and of native and foreign woods.

CARPENTER SHOP, with separate benches and tools for twenty stu-

dents in each class, besides lathe, mortising machine, scroll-saws, and general chest of tools for fine work.

SHOP FOR IRON WORK, with forges, vices, drill, etc.

PRINTING OFFICE, with twenty-five pairs of cases, a good assortment of type, and a half-medium Gordon press.

TELEGRAPH OFFICE, with six miles of line, connecting thirty-two branch offices, and as many instruments.

SEWING ROOMS, with five machines, models and patterns.

KITCHEN LABORATORY, with range, cooking and table utensils, and dining-room furniture.

MUSIC ROOMS, with three pianos, an organ, and other instruments.

LIBRARY AND READING ROOM, containing over 3,000 volumes and 150 periodicals, to which all students have access during College hours.

ARMORY, containing seventy-five stand of arms (breech-loading cadet rifles, caliber 45) with accoutrements.

EXPENSES.

Tuition is free; and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are required in advance:—

In analytical chemistry, students pay three dollars a term for the chemicals and apparatus used in their laboratory practice and analysis.

In the printing office, young men, in their first year, pay three dollars a term for office expenses. Advanced students have the use of the office for the work performed during their industrial hours.

In telegraphy, young men pay three dollars a term for office expenses.

Young ladies are furnished both printing and telegraphy free of expense, these two offices, with the sewing and the cooking departments, being provided especially for their industrial training.

Lessons in instrumental music are from five to fourteen dollars a term, according to the number of lessons.

Vocal music is taught in classes, at an average expense of one dollar a term.

The necessary text-books can be procured in Manhattan, at a cost of from two to five dollars a term.

Board and washing are not furnished by the College. Board can be procured in private families at from \$2.75 to \$3.50 per week. Some students board themselves at even less cost; and rooms for that purpose can be obtained at a rent of from \$1.00 to \$2.50 a month. Washing costs from fifty cents to one dollar a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$60 to \$150 a year.

EARNINGS.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for, unless the student is employed—outside of required hours of labor—upon work for the profit of the College. Some students are so employed upon the farm, in the gardens or the shops, and about the buildings. This labor, in limited quantities, is paid for at rates, varying with service rendered, from eight to ten cents an hour. The Superintendents strive to adjust their work to the necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. Students employed in the shops are allowed to work somewhat for their own profit, in the manufacture of articles for sale or use. In these ways, a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term-time, or from other sources, for the larger part of expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education, if he has the ability to use his opportunities well.

COLLEGE BUILDINGS.

The old Bluemont College and Boarding Hall, situated one mile west of the College grounds, are now devoted to students' rooms. The other buildings, all of Manhattan limestone, answer the following description, the numbers referring to the view opposite title page:—

1. College, of which the central building and north wing with connecting corridor are nearly completed. This building contains now chapel, society room, offices, library, reading room, and class rooms for Agriculture, Mathematics, English, History, and Drawing. When fully completed, the building will be 130 by 250 feet in extreme dimensions, arranged in three distinct structures, with connecting corridors.

2. Chemical Laboratory, one story high, 36 by 99 and 46 by 75 feet, in form of a cross. It contains eight rooms, occupied by the Department of Chemistry, Physics and Mineralogy, and the Printing office.

3. Mechanics' Hall, 39 by 103 feet, of two stories, occupied by the Carpenter shop and finishing room, Telegraph office, Music rooms, Sewing rooms, and Kitchen Laboratory.

4. Horticultural Hall, 32 by 80 feet, one story and cellar, with cabinet room, class room, work room and storage, with small greenhouse attached.

5. Dwelling of the President, not visible in view given.

6. Armory Hall, 46 by 96 feet, and two stories. It was originally designed for a barn, but is now used for the Armory and Drill room, the dwelling of the Farm Superintendent, and rooms for the janitor and for a few students.

The barn is of stone, 48 by 96 feet, with side-hill basement stables, granary, tool room, etc.

The blacksmith shop, piggery, implement shed, and various out-buildings, are of wood.

TERMS OF ADMISSION.

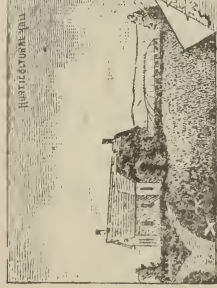
Applicants for admission at the beginning of the year, in September, must be at least fourteen years of age, and able to pass a satisfactory examination in reading, spelling, writing, arithmetic to percentage, geography, and elements of English grammar. Those applying later in the term must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of the term, in order to advance with the classes from the first.

Applicants of mature age who, for lack of advantages, are unable to pass the full examination may be received upon special conditions.

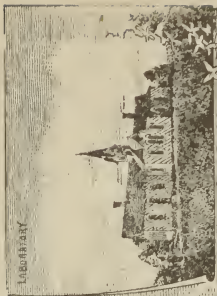
Applicants for advanced standing in the course, must pass examination in all the previous studies of the class to be entered; but, if they have pursued such studies in other institutions of similar rank, they may receive credit for their standing in those institutions upon presenting a certificate from the proper officer, showing that their course has been equivalent to that given here.

The following questions in arithmetic may serve as a sample of the usual examinations for admission:—

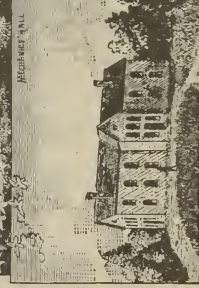
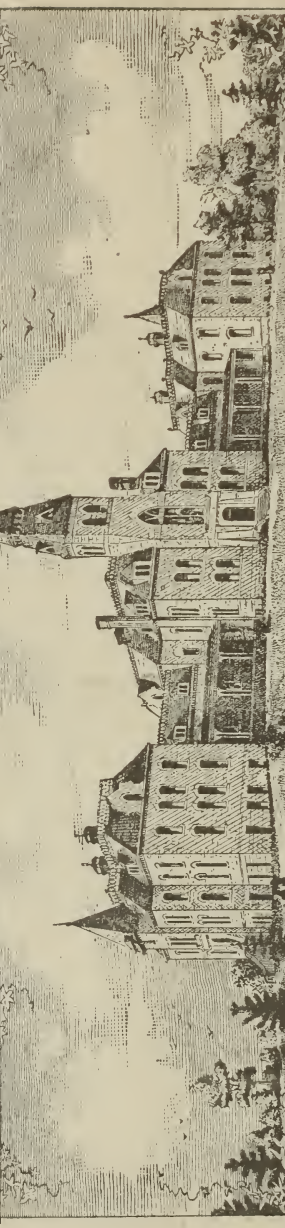
1. Define simple, compound, prime and composite numbers.
2. Divide ninety-seven million five hundred and forty-seven thousand three hundred and thirty-seven by three thousand eight hundred and ninety-one.
3. Find the greatest common divisor of 432, 504, 648.
4. Reduce $\frac{15}{18}$ to its least terms, and explain why its value is not altered.
5. What will 21 tons of hay cost, if $\frac{3}{8}$ of a ton costs 12.85?
6. Divide 8,563.125 by 42.75.
7. What will it cost to plaster the walls and ceiling of a room 23 feet long, $18\frac{1}{2}$ feet wide, and 12 feet 3 inches high, at 30 cents a square yard?
8. Reduce 5 square yards to the decimal of an acre.
9. How do you find the number of bushels of wheat a given bin will contain?
10. What will 1,875 pounds of hay cost at \$4.50 a ton?



HORTICULTURAL HALL



LABORATORY



MECHANICAL HALL



PANTRY

KANSAS STATE AGRICULTURAL COLLEGE.

1892

TWENTY-FIRST
ANNUAL CATALOGUE
OF THE
OFFICERS AND STUDENTS
OF THE
State Agricultural College
OF
KANSAS.

1883-84.

MANHATTAN, KANSAS:
PRINTING DEPARTMENT, AGRICULTURAL COLLEGE.
1884.

Board of Regents.

HON. F. D. COBURN, Wyandotte, Wyandotte Co.,
President.

HON. CHAS. E. GIFFORD, Clay Center, Clay Co.,
Vice-President.

HON. J. T. ELLICOTT, Manhattan, Riley Co.,
Treasurer.

HON. H. C. KELLERMAN, Burlington, Coffey Co.

REV. PHILIP KROHN, Atchison, Atchison Co.

HON. C. A. LELAND, El Dorado, Butler Co.

PRESIDENT GEO. T. FAIRCHILD (*ex officio*),
Secretary.

J. B. GIFFORD, *Land Agent,*

J. T. ELLICOTT, *Loan Commissioner,*

I. D. GRAHAM, *Assistant Secretary.*

} Manhattan, Riley Co.

Faculty.

GEORGE T. FAIRCHILD, A. M., PRESIDENT,
Professor of Logic and Political Economy.

EDWARD M. SHELTON, M. Sc.,
Professor of Agriculture, Superintendent of Farm.

GEORGE H. FAIRYER, M. Sc.,
Professor of Chemistry and Physics.

EDWIN A. POPENOE, A. M.,
*Professor of Horticulture and Entomology, Superintendent
of Orchards and Gardens.*

ALBERT TODD, A. M., LIEUT. 1ST U. S. ART'Y,
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WILLIAM A. KELLERMAN, PH.D.,
Professor of Botany and Zoology.

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Instructor in English and History.

IRA D. GRAHAM, B. Sc.,
Superintendent of Telegraphy, Secretary.

GEORGE F. THOMPSON,
Superintendent of Printing.

MRS. NELLIE S. KEDZIE, M. Sc.,
*Teacher of Household Economy and Hygiene, Superintendent
of Sewing.*

TIMOTHY T. HAWKES,
Superintendent of the Workshops.

WILLIAM L. HOFER,
Teacher of Instrumental Music.

WILLIAM H. COWLES, A. B., *Acting Librarian.*

JULIUS T. WILLARD, B. Sc., *Assistant in Chemistry.*

FOREMEN.

WARREN WHITNEY, *Farm.*

GEORGE E. HOPPER, *Gardens.*

WILLIAM BAXTER, *Greenhouse.*

JACOB LUND, B. Sc., *Blacksmith Shop.*

STUDENT ASSISTANTS.

JACOB LUND, B. Sc., *Mathematics.*

JOHN W. SHARTEL, *English.*

Students.

RESIDENT GRADUATES.

Jacob Lund, Class of '83, . . . Alma, Wabaunsee.
A. H. Newton, State Normal, '82, Manhattan, Riley.

FOURTH YEAR.

Emert S. Andress, . . . *Hanover, Washington.
Florence J. Brous, . . . Manhattan, Riley.
Bartholomew Buchli, . . . Alma, Wabaunsee.
John H. Calvin, . . . Manhattan, Riley.
William A. Corey, . . . Topeka, Shawnee.
Henry M. Cottrell, . . . Wabaunsee, Wabaunsee.
Carrie F. Donaldson, . . . Manhattan, Riley.
Florence A. Donaldson, . . . Manhattan, Riley.
Frank W. Dunn, . . . Goshen, Elkhart Co., *Indiana*.
I. Day Gardiner, . . . Eskridge, Wabaunsee.
Lydia P. Gardiner, . . . Eskridge, Wabaunsee.
Edwin H. Kern, . . . Ionia, Jewell.
Marion M. Lewis, . . . Stockdale, Riley.
Charles L. Marlatt, . . . Manhattan, Riley.
Lincoln H. Neiswender, . . . Silver Lake, Shawnee.
George C. Peck, . . . Junction City, Davis.
Hattie L. Peck, . . . Junction City, Davis.
John W. Shartel, . . . Wauneta, Chautauqua.

THIRD YEAR.

Thomas Bassler, . . . Philadelphia, *Pennsylvania*.
Harvey O. Benedict, . . . Bennington, Ottawa.

* Postoffice and county. State in Italics.

Clara F. Castle,	Manhattan, Riley.
Lizzie A. Clarke,	Jamestown, <i>Rhode Island</i> .
Annie M. Cowell,	Wakefield, Clay.
Judson H. Criswell,	Manhattan, Riley.
Albert Deitz,	Kansas City, Wyandotte.
Milton T. Evans,	Sedan, Chautauqua.
Florence F. Hough,	Melrose, Monroe Co., <i>Iowa</i> .
Franklin A. Hutto,	Manhattan, Riley.
Allan Lewis,	Topeka, Shawnee.
Jessie F. McDonald,	Manhattan, Riley.
David J. Moore,	Idana, Clay.
Nellie J. Murphy,	Tabor, Clay.
Arthur L. Noyes,	Pavilion, Wabaunsee.
Roscious K. Peck,	Junction City, Davis.
Seward N. Peck,	Junction City, Davis.
Julia E. Points,	Havensville, Pottawatomie.
Elias L. Pound,	Manhattan, Riley.
Clarence D. Pratt,	Silver Lake, Shawnee.
Horace Randal,	Fort Union, <i>New Mexico</i> .
Rollin R. Rees,	Minneapolis, Ottawa.
Grace R. Strong,	Manhattan, Riley.
David Wishart,	Pawnee City, Pawnee Co., <i>Nebraska</i> .
Grace Wonsetler,	Verbeck, Barton.
Effie E. Woods,	Randolph, Riley.

SECOND YEAR.

Scott E. Acton,	Nelson Center, Cloud.
Valdy V. Akin,	Manhattan, Riley.
Edgar A. Allen,	Beloit, Mitchell.
Elmer D. Anderson,	Louisville, Pottawatomie.
John B. Anderson,	Manhattan, Riley.
Bertha H. Bacheller,	Lyons, Rice.
Edwin B. Bacheller,	Lyons, Rice.
George W. Beeler,	Junction City, Davis.
Lillie J. Bridgman,	Atchison, Atchison.
Louis P. Brous,	Manhattan, Riley.
Joseph S. Brown,	Weston, Davis.
George A. Browning,	Manhattan, Riley.
Mark A. Carleton,	Warren, Cloud.
Mary E. Christensen,	Mariadahl, Pottawatomie.
DeEtta A. Clark,	Delphos, Ottawa.
Hattie P. Clarke,	Manhattan, Riley.
William E. Cooper,	Wild Cat, Riley.

Nellie E. Cottrell,	Wabaunsee, Wabaunsee.
Edwin J. Davies,	Bala, Riley.
Etta J. Dent,	Manhattan, Riley.
Fannie M. Dorman,	Wabaunsee, Wabaunsee.
Robbie C. Edgington,	Morse, Johnson.
Bert R. Elliott,	Manhattan, Riley.
Frederick B. Elliott,	Manhattan, Riley.
John E. Elliot,	Manhattan, Riley.
Paul H. Fairchild,	Manhattan, Riley.
Hugh C. Gaston,	Mankato, Jewell.
Mary Glossop,	Manhattan, Riley.
Abbott M. Green,	Oberlin, Decatur.
Alice M. Green,	Manhattan, Riley.
Mary Griffing,	Manhattan, Riley.
James G. Harbord,	Manhattan, Riley.
Nellie M. Harper,	Manhattan, Riley.
Emma Harvey,	Vinton, Riley.
John U. Higinbotham,	Manhattan, Riley.
Mrs. Margery Hopper,	Manhattan, Riley.
Maria C. Hopper,	Downs, Osborne.
Charles S. Houston,	Manhattan, Riley.
Edgar M. Hutto,	Manhattan, Riley.
Carrie V. Ingraham,	Manhattan, Riley.
Eva H. Ingraham,	Manhattan, Riley.
Mrs. Anna A. Inskeep,	Manhattan, Riley.
Charles E. Janeway,	Glen Elder, Mitchell.
Frederick G. Kimball,	Manhattan, Riley.
Mary Kokanour,	Clay Center, Clay.
Peter M. Kokanour,	Clay Center, Clay.
Chester A. Latham,	Wichita, Sedgwick.
William C. Lee,	Manhattan, Riley.
Clarence I. Limbocker,	Manhattan, Riley.
E. Ada Little,	Manhattan, Riley.
James Miller,	El Dorado, Butler.
Montgomery K. Miller,	Howard, Elk.
William C. Moore,	Minneapolis, Ottawa.
Mary E. Moses,	Manhattan, Riley.
Charles A. Murphy,	Tabor, Clay.
Barton Needham,	Lane, Franklin.
Georgia A. Nesbit,	Bazaar, Chase.
Amy E. Noyes,	Pavilion, Wabaunsee.
Maria B. Noyes,	Pavilion, Wabaunsee.
Frank L. Parker,	Hutchinson, Reno.
Louis B. Parker,	Manhattan, Riley.
James E. Payne,	Edgerton, Johnson.
Edward H. Perry,	Manhattan, Riley.

Malvina E. Pratt,	Silver Lake, Shawnee.
Ada H. Quinby,	Wakefield, Clay.
Ida A. Quinby,	Wakefield, Clay.
Minnie C. Rand,	Wabaunsee, Wabaunsee.
Mattie Reed,	St. Clere, Pottawatomie.
Minnie Reed,	St. Clere, Pottawatomie.
Thomas G. Rees,	Bala, Riley.
Marian C. Ritchie,	Iwacura, Clay.
Frank C. Rhodes,	Kansas City, <i>Missouri</i> .
David G. Robertson,	Mt. Ayr, Osborne.
Frederick J. Rogers,	Burriton, Harvey.
Alice M. Rolander,	Mariadahl, Pottawatomie.
Andrew A. Sebring,	Bismarck, Wabaunsee.
Florine Secrest,	Randolph, Riley.
John Simpson,	Aroma, Dickinson.
Edward O. Sisson,	Morpeth, <i>England</i> .
Sadie Smith,	Brighton, Washington Co., <i>Iowa</i> .
John H. Taylor,	Elmdale, Chase.
John W. VanDeventer,	Mankato, Jewell.
Lucy Waters,	Vinton, Riley.
George W. Waters,	Junction City, Davis.
Nimrod S. Welton,	Rantoul, Franklin.
F. Henrietta Willard,	North Topeka, Shawnee.
Laura B. Willey,	Tehama, Cherokee.
William W. Wightman,	Manhattan, Riley.
John L. Wise,	Greenville, Bond Co., <i>Illinois</i> .
Willis M. Wright,	Manhattan, Riley.
Cameron C. Wylie,	Tabor, Clay.
J. Walter Wyland,	Jewell City, Jewell.

FIRST YEAR.

Nettie M. Abell,	Leonardville, Riley.
Caddie M. Abbott,	Manhattan, Riley.
Lewis A. Abbott,	Manhattan, Riley.
Samuel W. Aldrich,	Winfield, Cowley.
Ulysses G. Allen,	Manhattan, Riley.
Elihu M. Anderson,	Constant, Cowley
Marselius Ash,	Galva, McPherson.
Fred H. Avery,	Wakefield, Clay.
George E. Avery,	Milford, Davis.
Walter Avery,	Wakefield, Clay.
Milan O. Bacheller,	Lyons, Rice.
Forney W. Baker,	Malta Bend, Saline Co., <i>Missouri</i> .

William W. Bates,	Williamstown, Jefferson.
Fred Baxter,	Salina, Saline.
Lydia J. Bayles,	Manhattan, Riley.
Edward F. Beal,	Manhattan, Riley.
Byron G. Beardslee,	Hope, Dickinson.
Morton W. Benham,	Cherryvale, Montgomery.
Elisha Bennett,	Logan, Phillips.
Emmet Bicknell,	Humboldt, Richardson Co., <i>Neb.</i>
John Biddle,	Axtell, Marshall.
Mary E. Bland,	Olesburg, Pottawatomie.
William N. Blevins,	Oskaloosa, Jefferson.
Frederick P. Booth,	Larned, Pawnee.
Melvin J. Boots,	Rossville, Shawnee.
John C. Bowers,	Downs, Osborne.
Martha J. Bowers,	Downs, Osborne.
Claude M. Breese,	Elmdale, Chase.
Irene Bridgman,	Atchison, Atchison.
Alice Brown,	Carbondale, Osage.
F. Emma Brown,	Red Stone, Cloud.
Frank Brown,	Carbondale, Osage.
John B. Brown,	Guilford, Wilson.
Abraham L. Brubaker,	McPherson, McPherson.
Frederick C. Bulkley,	Scandia, Republic.
Walter J. Burtis,	Waterville, Marshall.
James E. Calvin,	Manhattan, Riley.
Oliver G. Carnahan,	Garrison, Pottawatomie.
Samuel H. Carnahan,	Garrison, Pottawatomie.
Wilmina E. Caster,	Manhattan, Riley.
Isaac N. Chrisman,	Wauneta, Chautauqua.
Clement G. Clarke,	Manhattan, Riley.
Edward S. Clarke,	Junction City, Davis.
Marion W. Clark,	Tecumseh, Johnson Co., <i>Neb.</i>
Edgar B. Colburn,	Manhattan, Riley.
G. Barstow Condit,	Fort Wingate, <i>New Mexico.</i>
Charles K. Coolidge,	Topeka, Shawnee.
Grant A. Cooper,	Hutchinson, Reno.
Randall H. Cooper,	Wild Cat, Riley.
Della M. Copeland,	Clay Center, Clay.
Louisa M. Cowell,	Wakefield, Clay.
Minnie H. Cowell,	Wakefield, Clay.
Hattie S. Cragg,	Manhattan, Riley.
Mary A. Cutler,	Geuda, Sumner.
Lewis M. Dalgarn,	New Salem, Cowley.
Rachel Davis,	Manhattan, Riley.
Huldah M. Dial,	Big Timber, Riley.
Mary A. Dial,	Big Timber, Riley.
William E. Dodds,	Tabor, Clay.

Thomas G. Doile,	Emporia, Lyon.
Maggie Drummond,	Elmdale, Chase.
John H. Dunbar,	Columbus, Cherokee
Louis Eggers,	Louisville, Pottawatomie.
Alberta Embry,	Ottawa, Franklin.
Ernest H. Embry,	Ottawa, Franklin.
Issola I. Embry,	Ottawa, Franklin.
Harry P. Ewalt,	WaKeeney, Trego.
David G. Fairchild,	Manhattan, Riley.
Mattie I. Farley,	Melvern, Osage.
Harvey Ferris,	Columbus, Cherokee.
William B. Files,	Winfield, Cowley.
Nana Findley,	Lyndon, Osage.
May E. Finney,	Ogden, Riley.
Mary Finney,	Paxico, Wabaunsee.
Edmond C. Fletcher,	Stanley, Johnson.
E. Bertha Fry,	Millerstown, Perry Co., <i>Pennsylvania</i> .
Henry W. Gahan,	Manhattan, Riley.
Hattie L. Gale,	Manhattan, Riley.
Addie J. Galloway,	Manhattan, Riley.
Ernest A. Gardiner,	Eskridge, Wabaunsee.
Ulysses S. Garten,	Bennington, Ottawa.
Robert J. Gaston,	Tabor, Clay.
Nellie J. Gilbert,	Zeandale, Riley.
Clarence B. Gemeny,	Junction City, Davis.
Henry E. Gish,	Abilene, Dickinson.
Nina F. Gist,	Manhattan, Riley.
Taylor Goode,	Lenexa, Johnson.
Frederick C. Green,	Carbondale, Osage.
George F. Guy,	Wakefield, Clay.
Katie G. Harbord,	Manhattan, Riley.
Charles H. Harrington,	DeSoto, Johnson.
Lillian Harvey,	Vinton, Riley.
Elmer E. Hayward,	Toledo, Chase.
Isaac R. Herr,	Abilene, Dickinson.
Irene Hicks,	Hunnewell, Sumner.
Lynn L. Hilliker,	Cawker City, Mitchell.
Walter A. Hoffhine,	Washington, Washington.
Charles G. Holt,	Marquette, McPherson.
Louie A. Hookey,	Junction City, Davis.
Seth M. Houser,	Minneapolis, Ottawa.
LaBlanche Houston,	Manhattan, Riley.
W. J. Houston,	Manhattan, Riley.
William S. Hoyt,	Manhattan, Riley.
Elijah C. Hunter,	Morse, Johnson.
Minnie A. Hutcheson,	Clay Center, Clay.
Willis W. Hutto,	Manhattan, Riley.

Dennis A. Hynes,	Marysville, Marshall.
Thomas Hynes,	Marysville, Marshall.
Marlow W. Ingraham,	Manhattan, Riley.
John C. James,	Ottumwa, Coffey.
Richard E. Jeffery,	Zeandale, Riley.
Susie Jenkins,	Bala, Riley.
Bertie Johnson,	Manhattan, Riley.
John Johnson,	Caldwell, Sumner.
Mollie Johnson,	Garrison, Pottawatomie.
Humphrey W. Jones,	Bala, Riley.
Josiah S. Jones,	Aroma, Dickinson.
Alpha Kellam,	Cuba, Republic.
Mrs. Rosa Kelso,	Iola, Allen.
William T. Kent,	Ogden, Riley.
Clara M. Keyes,	Manhattan, Riley.
William F. Keyes,	Mankato, Jewell.
Clara A. Kingsley,	Hutchinson, Reno.
Lucius F. Kingsley,	Hutchinson, Reno.
Edward P. Kinney,	Manhattan, Riley.
Edia L. King,	Manhattan, Riley.
Edward H. King,	Jewell City, Jewell.
Frank V. King,	Jewell City, Jewell.
Charles I. Kligman,	Winfield, Cowley.
Charles A. Knipe,	Garrison, Pottawatomie.
Sadie Kokanour,	Clay Center, Clay.
Rolla C. Krebs,	Atchison, Atchison.
Solomon B. Landis,	Hoyt, Jackson.
Martin Larkin,	Camden, Morris.
Alfred Larzelere,	Wathena, Doniphan.
Alexander B. Lawson,	Tabor, Clay.
George H. Lawson,	Tabor, Clay.
Frank C. Leeper,	Leavenworth, Leavenworth.
Henry Lichtenhahn, Jr.,	Junction City, Davis.
Ernest Lindley,	Sedgwick, Sedgwick.
Abbie Marlatt,	Manhattan, Riley.
Mary A. Marlatt,	Manhattan, Riley.
John M. Marshall,	Zeandale, Riley.
Ettie Martindale,	Manhattan, Riley.
Ida Martindale,	Manhattan, Riley.
Olive M. Martindale,	Manhattan, Riley.
Lou Mattoon,	Topeka, Shawnee.
Marie Mattoon,	Topeka, Shawnee.
Amos E. McCollum,	Ogallah, Trego.
Anna B. McCullough,	Grand View, Morris.
L. Franklin McCullough,	Grand View, Morris.
Mary E. McCullough,	Grand View, Morris.
Olive H. McCullough,	Grand View, Morris.

Robert S. McCullough, . . .	Grand View, Morris.
Barton W. McDonald, . . .	Manhattan, Riley.
Etta McEwen, . . .	Manhattan, Riley.
Edward M. McFadden, . . .	Randolph, Riley.
John McFadden, . . .	Randolph, Riley.
Robert A. McGeorge, . . .	Council Grove, Morris.
Reubie L. McGrew, . . .	WaKeeney, Trego.
William McIlwain, . . .	Guilford, Wilson.
Robert B. McKee, . . .	Tecumseh, Johnson Co., <i>Neb.</i>
Tempie S. McKee, . . .	Marysville, Marshall.
James G. McLain, . . .	Wellsville, Franklin.
William J. McLaughlin, . . .	Centralia, Nemaha.
George B. Mechem, . . .	Mankato, Jewell.
Milton H. Meyer, . . .	Globe, Douglas.
John E. Miles, . . .	Oskaloosa, Jefferson.
Isaac R. Miller, . . .	Clay Center, Clay.
Joseph T. Miller, . . .	Fort Scott, Bourbon.
Eleanor Moore, . . .	Idana, Clay.
Albert Morrison, . . .	Barnard, Linn.
Archie W. Murray, . . .	Agricola, Coffey.
Mary B. Nesbit, . . .	Bazaar, Chase.
Henry G. Newton, . . .	Neosho Falls, Woodson.
Albert Nider, . . .	Waterville, Marshall.
Mary Noland, . . .	Manhattan, Riley.
Hattie M. Noyes, . . .	Wabaunsee, Wabaunsee.
Lewis Olson, . . .	Bennington, Ottawa.
William L. Osborn, . . .	Galva, McPherson.
George J. Parker, . . .	Sabetha, Nemaha.
Wesley C. Parker, . . .	Sabetha, Nemaha.
J. Walter Peckham, . . .	Manhattan, Riley.
Albert W. Persson, . . .	Randolph, Riley.
William R. Pettijohn, . . .	Hoyt, Jackson.
Frank W. Potter, . . .	Belle Plaine, Sumner.
John A. Powells, . . .	Fort Scott, Bourbon.
Torrence Prugh, . . .	Paola, Miami.
Carrie L. Raner, . . .	Farland, McPherson.
Charles L. Reed, . . .	St. Clere, Pottawatomie.
Mary A. Rees, . . .	Minneapolis, Ottawa.
William M. Reese, . . .	Poheta, Saline.
Louis F. Reins, . . .	Cherryvale, Montgomery.
Otis Reisinger, . . .	Mt Pleasant, Atchison.
Ethie M. Rhoades, . . .	Gardner, Johnson.
Carl E. Roberts, . . .	Bloomington, Osborne.
Amy Robertson, . . .	Winfield, Cowley.
Daniel G. Robertson, . . .	Winfield, Cowley.
Sarah E. Rodgers, . . .	Tabor, Clay.
George M. Roland, . . .	Abilene, Dickinson.

Jennie S. Romick,	Manhattan, Riley.
George W. Scott,	Churchill, Ottawa.
Harvey A. Scott,	Abilene, Dickinson.
Sherman SeEVERS,	Ellsworth, Ellsworth.
Joseph Shoner,	Newman, Jefferson.
Walter C. Short,	Oneida, Nemaha.
John Shunway,	Conneaut, Ashtabula Co., Ohio.
Septimus Sisson,	Morpeth, England.
Mary B. Smith,	Atchison, Atchison.
Jennie Smith,	St. Clere, Pottawatomie.
Jefferson D. Smith,	Fredonia, Wilson.
Anna Snyder,	Oskaloosa, Jefferson.
Edwin H. Snyder,	Geuda, Sumner.
Stanley Snyder,	Oskaloosa, Jefferson.
Willis R. Snyder,	Richland, Shawnee.
Louis R. Spohr,	Manhattan, Riley.
Maggie Stansbury,	Winfield, Cowley.
Florence M. Stettler,	Wellington, Sumner.
James K. Stevenson,	Quenemo, Osage.
Henry C. Stolp,	Baltimore, Cowley.
Evangeline H. Strong,	Manhattan, Riley.
David B. Sylvester,	Morse, Johnson.
Harry A. Taylor,	Rosedale, Wyandotte.
James Taylor,	London, England.
Harry O. Tennant,	Manhattan, Riley.
Albert J. Thoës,	Alma, Wabaunsee.
Blanche W. Thompson,	Minneapolis, Ottawa.
George N. Thompson,	Belmond, Wright Co., Iowa.
Prairieton Todd,	Iola, Allen.
William Treu,	Bismarck, Wabaunsee.
Kate M. Triplett,	Minneapolis, Ottawa.
Lena L. Tucker,	Clinton, Douglas.
Clarence VanNess,	Emporia, Lyon.
Nancy J. Walker,	White City, Morris.
Charles W. Wall,	Manhattan, Riley.
Margaret R. Warner,	Manhattan, Riley.
James A. Warren,	Downs, Osborne.
Ella M. Waters,	Junction City, Davis.
Lawrence A. Waters,	Junction City, Davis.
Silas A. Waters,	Junction City, Davis.
Sherman Waters,	Junction City, Davis.
Samuel Weichselbaum,	Ogden, Riley.
Frank A. Werden,	Joplin, Jasper Co., Missouri.
Charles Wickizer,	Kansas City, Missouri.
Frank Wickizer,	Kansas City, Missouri.
Theresa Wikander,	Randolph, Riley.
Samuel L. Williams,	Americus, Lyon.

Ira Wilson,	Sedgwick, Harvey.
Charles T. Woods,	Randolph, Riley.
Mittie M. Woods,	St. George, Pottawatomie.
Daniel W. Working, Jr.,	Logan, Phillips.
Alfred W. Wright,	Minneapolis, Ottawa.
Nellie M. Wylie,	Manhattan, Riley.
Mary A. Yarrow,	Wakefield, Clay.
Edgar R. Yount,	Salina, Saline.

SPECIAL COURSE.

Mary M. Akin,	Manhattan, Riley.
Stuart J. Hogg,	London, <i>England</i> .

NUMBER OF STUDENTS.

Classes :—	<i>Gentlemen.</i>	<i>Ladies.</i>	<i>Total.</i>
Resident Graduates,	2		2
Fourth Year,	13	5	18
Third Year,	16	10	26
Second Year,	55	37	92
First Year,	173	82	255
Special Course,	1	1	2
Total,	260	135	395
From 55 counties of Kansas,			371
From 10 other States,			24
Total,			395

Average age of students, 19.09 years.

Objects and Methods.

ENDOWMENT.

An act of Congress, approved July 2d, 1862, gave to each State public lands to the amount of 30,000 acres for each of the Senators and Representatives in Congress according to the census of 1860, for the "endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, * * in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

Under this act, the State of Kansas received 82,313.53 acres of land, and, in 1863, established the State Agricultural College, by endowing with these lands Bluemont College, which had been erected two miles from Manhattan under the auspices of the M. E. Church, but was presented to the State for the purpose named in the act of Congress. Of these lands, 78,721.45 acres are now sold, giving a fund of \$466,395.58, which is by law invested in bonds, the interest alone being used for current expenses of the College. There remain unsold 3,592.08 acres of land, lying in Riley, Dickinson, Washington and Marshall counties, appraised at nearly \$40,000.

In 1873 the College was reorganized upon a thoroughly industrial basis, with prominence given to practical agriculture and related sciences; and in 1875, the furniture and apparatus of the College were moved to buildings upon the farm of 171 acres, one mile from the city of Manhattan. On this fine location, the State has erected buildings valued at \$92,500, of which a description is given elsewhere. The farm and grounds, furniture, stock and other illustrative apparatus are valued at over \$40,000.

The annual income from the endowment fund, about \$35,000, meets all the expenses of instruction: the State provides, as the law requires, the necessary buildings, the Library, and means for experiment.

OBJECTS.

This College now accomplishes the objects of its endowment in several ways.

First, it gives a substantial education to men and women. Such general information and discipline of mind and character as help to make intelligent and useful citizens are offered in all its departments, while the students are kept in sympathy with the callings of the people.

Second, it teaches the sciences applied to the various industries of farm, shops and home. Chemistry, botany, entomology, zoölogy and mechanics are made prominent means of education to quick observation and accurate judgment. Careful study of the minerals, plants and animals themselves illustrates and fixes the daily lesson. At the same time, lessons in agriculture and horticulture show the application of science; and both are enforced by actual experiment.

Third, it trains in the elements of the arts themselves, and imparts such skill as to make the hands ready instruments of thoughtful brains. The drill of the shops, gardens and farm is made a part of a general education to usefulness, and insure a means of living to all who make good use of it. At the same time, it preserves habits of industry and manual exertion, and cultivates a taste for rural and domestic pursuits.

Fourth, it strives to increase our experimental knowledge of agriculture and horticulture. So far as means and circumstances permit, experiments are undertaken with a view to more definite results than ordinary experience can give. By this method, the students themselves are trained to a more accurate observation and judgment in these practical tests of principles in farming.

Fifth, it seeks to disseminate such practical truths as have stood the test of scientific inquiry. For this purpose it publishes the weekly *Industrialist*; and its officers share in the debates and consultations of farmers and horticulturists throughout the State. Each winter a series of six Farmers' Institutes is held in as many different counties of the State. In these the Faculty share with the people in lectures, essays and discussions upon topics of most interest to farmers.

COURSES OF STUDY.

The necessity for so adjusting various branches of a course of study that there shall be as little waste as possible in acquiring both information and discipline is felt by every teacher. Such a course is not designed to be absolutely inflexible, but to guide the judgment into

some definite line of progress from which no mere whim shall turn a student aside.

Each student is expected to take three studies besides one hour's practice in an industrial art; and variation from this rule can be made only with the consent of the Faculty.

Parallel courses are offered to both sexes, with such differences as their necessities seem to call for. The following gives the general scope of the two; but fuller explanations are found under OUTLINE OF INSTRUCTION:—

FIRST YEAR.

FALL TERM.—Arithmetic.

English Analysis.

Geometrical Drawing.

Industrial.

WINTER TERM.—Book-keeping.

English Structure.

United States History.

Freehand Drawing.

Industrial.

SPRING TERM.—Algebra.

English Composition.

Botany.

Industrial (Carpentry).

SECOND YEAR.

FALL TERM.—Algebra completed.

Elementary Chemistry.

Horticulture.

Fourteen lectures in Military Science.

Industrial.

WINTER TERM.—Geometry.

Agriculture or Household Economy.

Organic Chemistry and Mineralogy.

Twelve lectures in Military Science.

Industrial.

SPRING TERM.—Geometry completed, Drawing.

Entomology.

Analytical Chemistry.

Industrial (Farm and Garden or Dairy).

THIRD YEAR.

FALL TERM.—Trigonometry and Surveying.

Anatomy and Physiology.

General History.

Industrial (Farm and Garden).

WINTER TERM.—Mechanics.

Agricultural Chemistry.

Rhetoric.

Industrial.

SPRING TERM.—Civil Engineering with Drawing, or Hygiene.

Chemical Physics.

English Literature.

Industrial.

FOURTH YEAR.

FALL TERM.—Agriculture or Literature.

Meteorology.

Psychology.

Industrial.

WINTER TERM.—Logic, Deductive and Inductive.

Zoölogy.

Structural Botany.

Industrial.

SPRING TERM.—Geology.

United States Constitution.

Political Economy.

Industrial.

INDUSTRIAL TRAINING.—Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among these lines of training, each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening and Fruit-growing, Carpentry, Cabinet-making, Iron-work, Printing or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture or Music.

All young men must have their industrial for one term in the carpenter shop before completing the first year; and, during the spring term of the second year and the fall term of the third year, upon the farm, garden and orchards. Young women take their industrial for the winter term of the second year in the kitchen laboratory, and for the spring term of the second year in the dairy.

Military Drill is optional.

SPECIAL COURSES.—Persons of suitable age and advancement, who desire to pursue such branches of study as are most directly related to agriculture or other industries, may select such studies, under the advice of the Faculty. Assaying and Pharmaceutical Chemistry may be provided for by special arrangement, when students are qualified to pursue them.

CLASS HOURS, 1884-85.

FALL TERM, 14 WEEKS.			WINTER TERM, 12 WK'S			SPRING TERM, 11 W'KS.					
FIRST YEAR.			SECOND YEAR.			THIRD YEAR.			FOURTH YEAR.		
Hrs.											
I.	Arithmetic.	English.	Industrials.	Horticulture.	Algebra.	General History.	Meteorology.				
II.	Industrials.	Drawing.	English.	Algebra.	Horticulture.	Physiology.	Industrials.				
III.	Drawing.	Arithmetic.	English.	Industrials.	Chemistry.	Industrials.	Psychology.				
IV.	English.	Drawing.	Arithmetic.	Chemistry.	Industrials.	Trigonometry and Surveying.	Agriculture. Literature.				
V.	Industrials.			Chem. Practice. Military Science.	Chem. Practice. Military Science.	Surveying Practice.					
I.	Book-keeping.	Industrials.	U. S. History.	Household Economy.	Agriculture.	Ag'l Chemistry.	Zoology.				
II.	U. S. History.	Book-keeping.	Industrials.	Chemistry 6 weeks, Mineralogy.	Geometry.	Rhetoric.	Industrials.				
III.	English Structure.	Drawing 3 times a week.	Book-keeping.	Military Science, Blowpipe Analysis.	Military Science, Mineralogy.	Industrials.	Logic.				
IV.	Industrials.	English Structure.	Drawing 3 times a week.	Geometry.	Chemistry 6 weeks, Blowpipe Analysis.	Mechanics.	Structural Botany.				
V.	Drawing 3 times a week.	U. S. History.	Eng. Structure.	Industrials.	Industrials.						
I.	Industrials.	Composition.	Botany.	Drawing 5 weeks, Geometry.	Entomology.	Hygiene.	U. S. Constitution.				
II.	Botany.	Industrials.		Entomology.	Geometry 5 weeks, Drawing.	Chemical Physics.	Political Economy.				
III.		Botany.	Algebra.	Anal. Chemistry.	Anal. Chemistry.	English Literature.					
IV.	Algebra.		Composition.			Civil Engineering.	Geology.				
V.	Composition.	Algebra.	Industrials.		Drawing.	Drawing twice a week.	Industrials.				

All students meet in Chapel at half past eight o'clock each morning, except Saturday and Sunday. The time from 8:30 A. M. to 1 P. M. is divided into five "hours," as above; and a system of electric bells calls the classes in all the buildings at once.

Military Drill two or three times a week at the fifth hour.

Public exercises or class rhetorical exercises on every Friday afternoon, at 1:30.

POST-GRADUATE COURSES.—Arrangements can be made for advanced study in the several departments at any time. Special opportunities for investigation and research will be afforded at all times to resident graduates in Agriculture and Agricultural Chemistry, Physics and Chemistry, Horticulture and Botany, Zoölogy and Entomology, Mathematics, Engineering and Drafting. Every facility for advancement in the several arts taught at the College will be given such students, though they are not required to pursue industrial training while in such courses.

DEGREES.—The degree of Bachelor of Science is conferred upon students who complete the full course of four years and sustain all the examinations.

The degree of Master of Science is conferred in course upon graduates of three years' standing who give evidence of advancement in the application of science to the arts of practical life, and present an acceptable thesis upon some topic assigned by the Faculty. A copy of each thesis is to be deposited at the College.

OUTLINE OF INSTRUCTION.

AGRICULTURE.—*Second Year.*—History of agriculture, showing the successive steps by which the art has attained its present position. History and characteristics of breeds; their adaptation to the varying conditions of soil, climate and situation; study of the forms of animals, as shown by the different breeds belonging to the College; the relation of stock-raising to general farming. Cultivation of hoed crops; management of corn and roots with reference to stock feeding; and the growth of the finer grains. The growth of the "tame grasses" in Kansas; the best sorts for the State, and their management, as shown by experience on the College Farm and elsewhere. Implements of simple tillage; mechanical principles involved in their construction. Application of labor. Draught; different adjustments, as affecting draught; use of the dynamometer. Plows for soil and subsoil. Drainage; soils that need draining; how to lay out a system of drains.

Fourth Year.—General principles governing the development of domestic animals. The laws of hereditary disease,—of normal, abnormal

and acquired characters; atavism; correlation in the development of parts; in-and-in breeding and cross breeding; influences affecting fecundity. The selection and arrangement of the farm with reference to the system to be pursued. Rotation of crops; general advantages of a rotation; the best rotation for the distribution of labor, production of manure, and extermination of weeds. Planning farm buildings,—barns, piggeries and stables. Manure,—how best housed and applied; composting; commercial fertilizers. Agricultural experiments; field and feeding experiments. Stock-feeding and meat production; stall-feeding; soiling. In this, Miles's Stock-Breeding is supplemented by a course of lectures.

Books of Reference.—Journal of the Royal Agricultural Society of England, Morton's Cyclopaedia, Low's Practical Agriculture and Domesticated Animals, Fleming's Veterinary Obstetrics, Ribot on Heredity, Farmer's Calendar, Allen's American Farm-book, The Complete Grazier, Stephens's Book of the Farm, Thomas's Farm Implements, Waring's Draining for Profit and Health, the reports of our own and other State Boards of Agriculture, and Shorthorn, Scotch Polled, Jersey and Berkshire Herd-books.

HORTICULTURE.—It is the aim to teach this art from a botanical basis. The student applies his knowledge of the prime facts in botanical physiology to the various operations of the nursery, orchard and farm. Barry's Fruit Garden is used, supplemented by a series of lectures upon the following topics, among others: The scope of Horticulture. General principles of propagation,—by buds, by seeds. Production of improved varieties,—by careful selection of seeds, by interfertilization of known kinds. Perpetuation of valuable sorts of fruits by bud propagation,—budding, grafting, layering, etc. The important points in nursery manipulation. The orchard; conditions of site, soil, exposure, elevation. Special treatment of different kinds of fruit trees. Pruning. Gathering and storing fruits. Small-fruit culture; lists of varieties suitable for Kansas planting. Vegetable garden; selection and preservation of seeds; planting and transplanting. The management and use of the hot-bed and cold-frame. Forest plantations. Wind-breaks. Hedges. Trees and shrubs for ornamental planting.

Books of Reference.—The horticultural works of Downing, Warder, Fuller, Thomas, Loudon, Henderson, and other standard authorities. The Horticultural Reports of the States of Kansas, Michigan, Illinois, Iowa, Missouri, Massachusetts and others.

In Landscape Gardening, the works of Downing, Weidenmann and Kemp.

BOTANY.—During the College course, two terms are given to the study of Botany.

Elementary Botany.—In the spring term of the first year, the organs of plants are first studied, after which the minute anatomy is briefly

considered. This is followed by a study of vegetable physiology. The classification of plants and vegetable products and their uses are other important topics of the course. During the latter part of the term, a number of flowers are analyzed, and a few plants collected and prepared for the herbarium. Text-book, Kellerman's Elements of Botany and Plant Analysis.

Advanced Botany.—In the winter term of the fourth year, the minute structure of plants, as well as vegetable physiology, is studied more fully. This includes an examination of the vegetable cell, its parts, modifications and products, and of tissue as presented in its various forms. This is made the basis for more detailed work on special subjects, among which may be mentioned germination, development of tissues, protoplasm, starch, parasitic fungi, especially the moulds, smuts, rusts, etc., and other cryptogamic plants. Each student has the use of a compound microscope, and works two hours daily in the botanical laboratory. While this course is intended primarily to furnish a foundation for applied botany in horticulture and agriculture, it also affords, to some extent, the advantages of systematic observation and original investigation. A good herbarium and a large greenhouse are drawn upon for material for study.

Books of Reference.—The works of Sachs, Gray, Lesquereux, Sullivant, Engelman, Tuckerman, Cooke, Berkeley, Darwin, Baxter, Bessey and others.

CHEMISTRY.—*Inorganic Chemistry*, which occupies fourteen weeks of the second year, includes a consideration of chemical force and of the laws of chemical combination, with nomenclature and formulæ, and a careful study of the history, manufacture, physical, chemical and physiological properties, tests and uses, of the various elements and their compounds. Especial attention is given to those substances having extended application in the arts. In addition to the usual lecture-room experiments, the student repeats, as far as practicable, all this experimental work at his private work-table.

Organic Chemistry comprises a six weeks' course of lectures upon the preparation and properties of those organic substances most useful to man.

In *Chemical Analysis*, each student has his stand in the Qualitative Laboratory, completely furnished with apparatus and chemicals for his own use. His work includes the analysis of more or less complex mixtures of chemicals, minerals, ores, soils, mineral waters, well waters, etc. The time given to this work is two hours daily for eleven weeks. Text-book, Kedzie's Manual.

AGRICULTURAL CHEMISTRY.—This includes a thorough consideration of the application of chemical principles to the economy of the farm; the origin and formation of soils; the classification and composition of soils; the analysis of soils and their adaptation to purposes of production; the composition and use of manures; composting; chemistry

of farm operations,—such as plowing, fallowing, draining; chemistry of plant growth. Text-book, Johnson's "How Crops Feed."

Books of Reference.—In general chemistry, Roscoe, Schorlemmer, Miller, Storer, Cooke, Strecker, Bloxam, Reimsen, Frankland. In applied chemistry, Paul & Payen, Muspratt, Watts's Dictionary, Wagner's Technology, Crookes's Metallurgy. In Chemical Analysis, Fresenius, Thorpe, Blythe, Prescott and Wanklyn; Sutton's Volumetric Analysis, Crookes' Select Methods. Journal of the Royal Agricultural Society, Reports of experiment stations, current scientific journals.

MINERALOGY.—For six weeks in the second year, two hours a day are given to mineralogy. This includes the study of crystallography, with the properties, forms and uses of the principal minerals of the United States. Blow-pipe analysis forms an important part of the course, each student being required to identify and name a large series of minerals. Text-book, Dana's Mineralogy and Lithology.

Books of Reference.—The works of Dana, Plattner and Elderhorst.

PHYSICS AND METEOROLOGY.—Two terms' work gives an opportunity for experimental study of the laws of heat, light, electricity and magnetism; the constitution of the atmosphere; the measurement of temperature and humidity; atmospheric pressure. Text-books, Miller's Chemical Physics and Loomis's Meteorology. This course also includes a careful study of instruments and methods employed in taking meteorological observations.

Books of Reference.—The works of Deschanel, Ganot, Tyndall, Faraday, Helmholtz, Grove, Gordon and Thompson.

GEOLOGY.—This includes a general consideration of the earth's features, the constitution of rocks, and the arrangement of rock-masses; the causes or origin of events in geological history; the order of succession in the strata of the earth's crust, and of the organisms that existed and the changes that were going on during the formation of each stratum. Prominence is given to facts having an economic bearing. The formation of soils, and deposits of valuable minerals, especially in Kansas, are considered. Dana's New Text-book of Geology is used.

Books of Reference.—The works of Dana, LeConte, Geike, and the various geologic surveys.

ANATOMY AND PHYSIOLOGY.—Human anatomy is made the basis of a thorough study in physiology and hygiene. This includes such subjects as: Digestion and food; poisons and antidotes; circulation of the blood; respiration and ventilation; secretion and excretion; the nervous system; and the special senses. The course embraces, to some extent, Comparative Anatomy and Physiology, affording preparation for the study of stock-breeding and of Zoölogy. Martin's Human Body is used as a text-book.

Books of Reference.—Dalton's Human Physiology, Carpenter's Human Physiology, Hunt's Physiology of Man, and Gray's Anatomy.

SPECIAL HYGIENE.—To the ladies of the third year, a course of daily lectures is given by the Superintendent of the sewing room upon the laws of life and health. The course extends over a period of ten weeks, and covers questions pertaining to personal health and the health of the household,—such as food, air, exercise, clothing, temperature of rooms, and care of sick-room.

Books of Reference.—Health and its Conditions (Hinton), Lungs (Dio Lewis), Hand-book of Nursing, Dictionary of Hygiene (Blythe & Tardien).

ENTOMOLOGY.—This science is studied with especial reference to its economic relations with agriculture and horticulture. A brief course in the principles of classification is followed by a more extended study of the life-history of beneficial and injurious insects, and means of encouragement of one and the control of the other.

The instruction is presented in the form of lectures. Illustrations are furnished from the individual collections of the students, and from the entomological collections belonging to the College. Charts and drawings from nature are used to illustrate points of value in classification.

Books of Reference.—Packard's Guide to the Study of Insects, Harris's Insects Injurious to Vegetation, Riley's Reports, LeBaron's Reports, Fitch's Reports, Thomas's Reports, Reports of the U. S. Entomologist, Transactions of the American Entomological Society, Canadian Entomologist, Psyche and others.

ZOÖLOGY.—In this study, Packard's Zoölogy has been adopted as a text-book. The intention of the course is to familiarize the student with the characters of some type in each class, and then, by comparative study, with the chief modifications of the type chosen. Especial attention is given to comparative anatomy and physiology. A good collection of animals, birds, reptiles and fishes, both mounted and alcoholic, a small but rapidly increasing collection of invertebrates in alcohol, and a fine collection of conchological specimens, are among the means of illustration. Dissection and work with the microscope accompany the study.

Books of Reference.—A selection of standard works, including those of Agassiz, Huxley, Gegenbaur, Balfour, Foster, Darwin, Wallace, Packard, Coues, Baird, Jordan and others.

ARITHMETIC.—In the first year, one term is given to a general review of arithmetic. Practical measurements and the various applications of percentage receive special attention. Such forms of solution are required as lead to logical analyses. Two objects are aimed at in this course: first, to give a practical knowledge of the computations used in ordinary business life; second, to secure the mental discipline so necessary to the study of higher mathematics. Text-book, Brooks's Union Arithmetic.

BOOK-KEEPING AND COMMERCIAL LAW.—Beginning with a simple

cash account, Book-keeping is developed through all the principles of single and double entry. Considerable time is given to those forms best adapted to farm and business life. Each student provides a full set of blanks, and keeps a regular set of books, in which accuracy of calculation and posting, and neatness of execution, are regarded as essential as correct understanding of the principles. No text-book is used, but all forms and problems are furnished in the classroom, and frequent reference is made to the standard works of Mayhew, Duff and Bryant.

In addition to this term's work in Book-keeping, a practical course in Commercial Law is given, including contracts, sale of personal property, negotiable paper, interest, agency, partnership, bailment, common carriers of freight and passengers, the law of host and guest, real estate, and the forms of business paper. Text-book, Carhart's Commercial Law.

Reference.—Townsend's Commercial Law.

ALGEBRA.—Two terms are devoted to the study of Algebra. In the first the student is thoroughly drilled in algebraic notation, the fundamental rules, the secondary operations of composition and factoring, and the simple form of the equation. The second term is devoted to the various transformations and applications of the equation,—simple, quadratic, radical, etc. The equation thus becomes a most important instrument for solving the problems of practical life in which quantity is an item; for demonstrating theorems in geometry and trigonometry; and for the construction of formulas for the use of the engineer and artisan. Text-book, Wentworth's Algebra.

Books of Reference.—Newcomb, Schuyler, Wells, Todhunter.

GEOMETRY.—Two terms are given to Geometry. In geometrical drawing, the student has already become familiar with geometrical forms and their construction. The first term is devoted to plane geometry. During the second term, solid and spherical geometry are studied in connection with technical drawing. Practical problems, involving the principles demonstrated, are given to the class. Text-book, Wentworth's Geometry.

Books of Reference.—Chauvenet, Warren and others.

TRIGONOMETRY AND SURVEYING.—The principles of plane trigonometry, involved in mensuration and surveying, are first mastered. Surveying includes theory; adjustment and use of instruments; history and methods of U. S. Government surveys; areas of land; dividing land; retracing old land; platting; topographical surveying; railroad surveying; leveling,—section and cross section; field practice with transit, compass, chain, level and rod. Text-book, Ray's Trigonometry and Surveying.

Books of Reference.—Gillespie, Reports of the U. S. Land Office.

MECHANICS AND ENGINEERING.—A careful consideration of the laws

of motion and force, as exhibited in all kinds of machines and various phenomena of nature, occupies a single term. Another term is given to study of proper materials for buildings, their construction and durability; forms of roofs and bridges; care and use of machinery; and roads and road-making. Text-books, Peck's Mechanics, Mahan's Civil Engineering.

Books of Reference.—Rankine's Mechanics, Hand-books of Engineering.

DRAWING.—This study is required in four terms, of which two are in the first, one in the second, and one in the third year.

First Term.—Daily lessons. Definitions of lines and geometrical figures; judging and measuring lines and angles; construction of perpendiculars to given lines, of triangles, four-sided figures and polygons, of the circle and its secant lines, of ellipses, and various geometrical ornaments. Prof. Morse's first two books on mechanical drawing are used as text-books.

Second Term.—Freehand drawing three times a week. After the study of Nos. 3, 4 and 5 of White's Text-books of Art Education, drawing from nature is taken up. Leaves, flowers and fruits are taken as subjects, and placed in such positions that the perspective will not interfere seriously with a correct perception of form. Each student is required to finish a set of drawings. Lectures on principles and history of ornamentation are occasionally given.

Third Term.—Mechanical drawing five weeks. Projection of the straight line and the circle; use of drawing board, T-square and water colors. Principles of shades and shadows. Books 3 and 4 of Morse's Mechanical Drawing.

Fourth Term.—Mechanical drawing twice a week. Principles of parallel and angular perspectives; intersection of geometrical solids; construction and development of the most common regular curves. Books 5 and 6 of Morse's Mechanical Drawing. Each student is required to draw and color a set of plans for a farm building, or give details of some farm machine.

Students who show special aptitude are encouraged to take drawing as a fourth study during any part of the course, and are given every opportunity to fit themselves for the draughting office, or for special art schools. The instruction includes an extended course in freehand drawing, shading, coloring, architectural and mechanical drawing.

Books of Reference.—Warren's Descriptive Geometry, Walter Smith's Manuals on Art Education, Woodward's National Architect, Guild's American Stair-builder, Andre's Hand-book of Topographical Drawing, Davies's Shades and Shadows, Smith's Cyclopedia of Architecture, Prang's Art Atlas, Lübke's History of Art, Steinhauser's Room Decoration.

ENGLISH LANGUAGE AND LITERATURE.—*First Year.*—The study of English Grammar is made to serve directly in securing clear perception and correct expression. Such practice in analysis and parsing as

may give the student a clear idea of the English sentence in all its parts is associated with frequent exercises in expression and criticism. Under English Structure is included a careful study of words and their elements,—roots, stems, prefixes and suffixes. The most fruitful roots from the Saxon, Latin and Greek are learned, and also the laws governing the changes in the letters of roots in forming derivatives. Lectures are given upon the origin and history of the English language. At the same time, the daily exercises are made a means of training in articulation, spelling, writing, and the essentials of good reading. Text-books, Reed & Kellogg's Higher English Lessons, Swinton's Word Analysis.

Principles and methods in English Composition are then taken up, with David J. Hill's Elements of Rhetoric for a text-book. Numerous exercises and revisions familiarize the students with the essentials of neat, legible manuscript and clear, forcible expression.

Each class meets once every fortnight for drill in elocution and composition.

Third Year.—One term is given to the study of Higher Rhetoric, embracing the principles of clear explanation and convincing argument, as well as the outline of sound criticism, as presented in A. S. Hill's Rhetoric. This is followed by a term spent in the History of the English language and literature, with abundant illustrations from the best authors. Students are led in this way to appreciate the power of our mother-tongue, and at the same time to gain a slight acquaintance with the best thoughts of the world. Students are encouraged and directed in the use of the College Library, and are under constant oversight in the expression of their thoughts in writing. Original declamations, carefully prepared and delivered before the students and Faculty, make a part of the drill in the higher classes.

In the course for young women, the first term of the fourth year gives training in the elements of criticism and good taste by a critical study of famous works in English and American Literature.

Books of Reference.—Goold Brown's Grammar of English Grammars, Marsh's Lectures on the English Language, Whitney's Life and Growth of Language, DeVere's Studies in English; Allibone's Dictionary of Authors, Hallam's Literature of Europe, W. D. Adams's Dictionary of English Literature, C. K. Adams's Manual of Historical Literature.

HISTORY AND POLITICAL ECONOMY.—In the first year the study of United States History occupies a single term, and special attention is given to the form and growth of the government under which we live.

In the third year a term is given to General History, with Swinton's Outlines as a text-book. The world's progress in science, literature and art is carefully traced, with its causes.

In the fourth year, a careful study of the Constitution of the United States, with Cooley's Principles of Constitutional Law as a text-book,

shows the general principles of government, its means and methods, illustrated by historical references.

The study of Political Economy, in a full term of the fourth year, gives a fair presentation of subjects connected with production, distribution and consumption of wealth. Chapin's *Wayland's Elements* is the text-book; but pains is taken to compare conflicting views, and point out sources of information on all sides of vexed questions, without bias or prejudice.

Books of Reference.—Guizot's *Civilization*, Bancroft's *United States*, Hume's, Macaulay's and Green's *England*, Guizot's *France*, and a good library in general history. In Political Economy, works of Adam Smith, Mill, Fawcett, Cairnes, Walker, Bowen, Carey and Thompson.

HOUSEHOLD ECONOMY.—A series of lectures to the ladies of the second year continues through a term of twelve weeks. These cover the subjects of marketing, the chemistry of cooking, order, neatness and beauty in housekeeping, and comfort of a family. The class spend one hour each day in the Kitchen Laboratory, and cooking is done by each student.

References.—Dr. Pavy, Miss Acton, Miss Dodds, Miss Parloa and Miss Youmans.

LOGIC AND PHILOSOPHY.—The art of reasoning correctly is aided by a study of systematic logic, both deductive and inductive. Special prominence is given to methods for exact observation and experiment, and correct principles for classification. The previous researches and experience of the student are made to illustrate these principles. Text-book, Jevons's *Lessons in Logic*.

A short course in Psychology gives the general principles of intellectual and moral philosophy. Perception, understanding, reason, feeling and volition are topics of explanation and analysis. Theories of right and wrong, and correct principles of action, are made the basis of a clear understanding of individual rights and duties. Hopkins's *Outline Study of Man* forms the basis of the course.

Books of Reference.—Mill's, Jevons's and Fowler's *Logic*, Bascom's *Psychology*, Porter's *Human Intellect*, Fairchild's *Moral Philosophy*, Cousin's "*The True, The Beautiful and The Good*," and works of Spencer, Hamilton and others.

INDUSTRIAL ARTS.—The training in these departments is designed to be systematic and complete in each, so that any student, following a single line diligently through a four-years' course, gains the essentials of a trade and a reasonable degree of skill. Those who wish only a general acquaintance with the arts can take shorter courses in several of them; but all are to select with a definite purpose. In the established course, young men are required to take the regular term in the carpenter shop and on the farm and gardens, whatever the industrial chosen; young women are required to give one term of practice

in the Kitchen Laboratory, and one in the dairy, though other industrials may occupy their course.

Dairying.—During the spring term, daily instruction and practice in the different branches of dairying is given the ladies of the second year by the Instructor in Household Economy. A dairy, well equipped in modern appliances for the manufacture of butter and cheese, is connected with the Department of Household Economy. Here the regular dairy work is supplemented by a short course of lectures intended to explain the best practices in the arts of butter and cheese-making, and to give the reasons therefor. The following topics cover, in the main, the instruction given the class: Influences affecting the quality and quantity of milk; butter-making; the household and factory systems of cheese-making; creameries; “deep” and “shallow” setting systems; packing and preserving butter.

Agriculture and Horticulture are required of young men as industrials during one term of the second year and one term of the third year. In these, practice is made to illustrate and emphasize the teaching, and covers essentially the same ground.

Work in Wood and Iron.—All students enrolled in classes for wood work will be given lessons in sawing and planing to test their skill, and advanced as fast as their work will warrant. Students who desire to learn the trade of carpentry will be given work in the direct line of that trade as far as possible. Work on roofing, framing, bridge work and stair-building will be done by models. Careful instruction will be given in sharpening, fitting up, and taking general care of all tools required in the work. Carpentry is required of young men during one term of the first year.

In iron work, instruction is given in ordinary work,—forging, filing, tempering, etc

Printing.—Two courses are pursued in this art. In one the student is taught the implements or tools employed in typography, and how to use them; composition; imposition; correcting proof; technical terms; presses and their workings; and the general duties of a first-class workman. Everyone is encouraged in the study of the rise and progress of printing and related arts. Habits of accuracy and thoroughness are required, in order to advancement. The second course of lessons, alternating with those in the first, embraces instruction in spelling, capitalization, syllabication, punctuation, proof-reading, preparation and criticism of essays, and such other work as will make the student accurate and expert in language. Wilson's Punctuation is the textbook; but much of the instruction is oral,—such as grows out of the every-day experience of the office.

Admirable drill is furnished by the *Industrialist* to all, but especially to those who take the full course. The printing which the departments of the College require gives to the advanced student a fair knowledge of the principles and practice of job work.

Books of Reference.—MacKellar's American Printer, Harpel's Typograph, Rounds's Printers' Cabinet, Ringwalt's Encyclopedia of Printing, DeVinne's The Invention of Printing, and standard works on grammar and rhetoric.

Telegraphy.—The course of training involves for beginners the characters that compose the alphabet, and combination of these characters into words and sentences,—attention being paid to spelling and to short and precise expression in messages,—abbreviations, signals, forms of messages, train orders, reports, etc. To the more advanced is given regular line business,—as press reports, messages, cypher messages, and orders in all forms used by prominent telegraph companies, together with the necessary book-keeping, upon exact copies of blanks in actual use, thus giving the student an understanding of the work of an operator. A portion of the time is devoted to instruction in the use and management of lines, batteries, instruments, etc. The elementary principles of electricity, magnetism and electro-magnetism involved in telegraphy are taught and illustrated by experiments. The more recent inventions relating to the art are discussed and explained. Pope's Hand-book of the Telegraph is used as a text-book.

Books of Reference.—Prescott's Electric Telegraph, Morse's Telegraphic Apparatus, Culley's Telegraphy, and the works of DuMoncel, Clark & Sabine, Davis & Rae, Mandet, Jenkins, Harris, with the Journal of the Telegraph and the Electrical Review.

Sewing.—Young ladies are taught in all ordinary forms of sewing with needle and machine, and in cutting, fitting and trimming dresses and other garments. A straight-line system of cutting and fitting is taught, and systems are furnished to the students at wholesale rates. They may furnish materials, and work for their own advantage during the hour of practice, under the direction of the Superintendent.

Instrumental Music.—Provision is made for the teaching of music upon instruments of all sorts. A full course upon the organ or piano extends over four years, including harmony and composition; but students may take lessons for a single term if they choose. The College furnishes the instrument for daily practice, but the instruction is paid for at usual rates.

MILITARY TRAINING.—During the second year, a course of twenty-six lectures is given. Fourteen of these are designed to show what an army is for, its relation to the country, and, in a general way, to describe its organization and duties. The remaining twelve are devoted to the consideration of the campaigns of the Rebellion of 1861–65.

To those who desire it, an opportunity is given for practice in the ordinary infantry drills, including bayonet and sword exercise and target practice. Although drill is thus made optional, students are not allowed to take it for periods shorter than one term. To obtain a

proper proficiency, however, one should take the tri-weekly drill for at least a year.

The College battalion is divided into companies, which are officered by students appointed by the Professor in charge with the approval of the President.

Arms and accoutrements are furnished by the Government, the students being required to keep such as they use in proper condition.

Books of Reference.—Wilhelm's Military Dictionary, Hamley's Operations of War, Upton's Armies of Asia and Europe, Scribner's Series of Campaigns of the Civil War, Comte de Paris' History of the Civil War in America.

LABOR.

Every encouragement is given to habits of daily manual labor during the College course. Only the one hour of daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their ability and means.

The College employs students, when possible, on the farm and in the gardens, shops and offices, paying wages varying in rate with accomplishment from eight to ten cents an hour.

All labor at the College is under the direction of the Superintendents of the departments, and offers opportunity for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed. A few students who have shown especial efficiency are employed during the summer vacation.

The shops and offices are open afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character by both precept and example, and expected "upon honor" to maintain a good repute. Failure to do so is met by prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week-day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship and deportment shows to each student his standing in the College. After each monthly examination a report of advancement is made to parents; and any student, upon leaving College at the close of a term, may receive a certificate of standing.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Twice in each month the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third and fourth-year classes. On alternate weeks all the classes meet at the same hour, in separate class-rooms, for exercises in elocution and correct expression.

Instruction in Vocal Music, for beginners and for advanced students, is furnished at a very slight expense, under the direction of the Professor of Music with whom all arrangements for entering these classes may be made.

There are two prosperous literary societies of many years' standing. Both have libraries, and meet weekly in the Society Room. The *Alpha Beta* is open to both sexes, and holds its meetings Friday afternoons. The *Webster* admits to membership gentlemen only, and meets on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the first Friday evening of each month.

Every Friday evening a students' prayer meeting is held in the College Society Room, led by a member of the Faculty. On the Sabbath students are expected to attend services at least once in the different churches of the city.

Occasionally during each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises and friendly greeting find place.

The Manhattan Horticultural Society meets monthly, and other farmers' associations occasionally, at the College, and the students have the privilege of attending the meetings.

MEANS OF ILLUSTRATION.

AGRICULTURE.—Farms and farm crops.

A well-planned barn for grain, hay, horses and cattle; and a pig-gery of six pens, with separate yards.

Shorthorn, Aberdeen-Angus, Galloway and Jersey cattle; Berkshire, Poland-China, Jersey Red and Essex swine.

Farm implements of improved patterns.

Collections of grains, grasses and forage plants.

HORTICULTURE.—Orchards, containing 250 varieties of apples, 40 of peaches, 50 of pears, 10 of plums, 8 of cherries and 7 of apricots.

Small-fruit garden, with 200 varieties of small fruits, including blackberries, raspberries, gooseberries, currants and strawberries; and vineyard with 100 varieties of grapes.

Forest plantation of twelve acres, containing twenty varieties of from ten to fifteen years' growth.

Ornamental grounds, set with a variety of evergreen and deciduous trees. Sample rows, containing about 150 varieties of ornamental and useful shrubs and trees, labeled.

Vegetable garden, with hot-beds and cold-frames and experimental beds. Practice rows for students' budding, grafting, cultivating and pruning.

A well-planned and furnished greenhouse of three rooms, stocked with a collection of native and exotic plants.

CHEMICAL LABORATORY. with seven rooms, fitted with tables and apparatus for a class of eighty students; also, physical apparatus and meteorological instruments.

MODELS, PLASTER CASTS AND PATTERNS for drawing, and charts for illustration.

BOTANICAL MUSEUM, containing a good herbarium, fairly representing the flora of the United States; a collection of native and foreign woods, seeds, nuts, dry fruits; a collection of abnormal wood growths, and a small but choice collection of living exotics.

MINERAL AND GEOLOGICAL cabinets, including collections of Professor Mudge; a representative collection of the ores of Colorado, New Mexico and Arizona.

ZOOLOGICAL MUSEUM, containing a typical collection of birds and mammals, mounted; a cabinet of bird skins, eggs and nests; a good collection of reptiles and fishes in alcohol; a large series of land, freshwater and marine shells; a good representation of the insects of this locality, and a small collection of invertebrates in alcohol.

MATHEMATICAL INSTRUMENTS,—compasses, transits, levels, chains, for field work.

CARPENTER SHOP, with separate benches and tools for twenty-five students in each class, besides lathes, mortising machine, and general chest of tools for fine work.

SHOP FOR IRON WORK, with forges, vices, drill, etc.

PRINTING OFFICE, with twenty-five pairs of cases, a good assortment of body and job type, a half-medium Gordon press, and a paper cutter.

TELEGRAPH OFFICE, with six miles of line, connecting thirty-two branch offices, and as many instruments, and a Remington typewriter.

SEWING ROOMS, with six machines, models and patterns.

KITCHEN LABORATORY, with range, cooking and table utensils, and dining-room furniture.

MUSIC ROOMS, with four pianos, three organs, and other instruments.

A CAREFULLY SELECTED LIBRARY, containing over 5,000 volumes. A reading room is maintained in connection with the Library, where may be found on file forty-five of the leading literary, scientific, technical and agricultural periodicals, and several hundred newspapers, including the principal daily and county papers from all parts of the State.

ARMORY, containing seventy-five stand of arms (breech-loading cadet rifles, calibre .45) with accoutrements.

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:—

In analytical chemistry, the students pay \$3 a term for the chemicals and apparatus used in their laboratory practice and analysis.

In the printing office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have the use of the office for the work performed during the industrial hours.

In telegraphy young men pay \$3 a term for office expenses.

Young women are furnished both printing and telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music, two a week, are from \$10 to \$14 per term, according to its length; one a week, \$6 to \$8.40. One-half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

Vocal music is taught in classes at an average expense of \$1 a term.

The cost of text-books at the book-store is, for the first year, about \$4 a term; for the second year, \$2.75; for the third year, \$7.50; and for the fourth year, \$5.50.

Board and washing are not furnished by the College. Board, with furnished room, can be procured in private families at from \$2.75 to \$4 per week. Some students board themselves at even less cost; and rooms for the purpose can be obtained at a rent of from \$1 to \$2.50 a month. Washing costs from \$0.50 to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$75 to \$200 a year.

EARNINGS.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed—outside of required hours of labor—upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates, varying with service rendered, from eight to ten cents an hour. The Superintendents strive to adjust their work to the necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay roll for the past year ranges from \$266 to \$342.

Many students obtain work in the city or upon neighboring farms, and so pay a part of their expenses. Students employed in the shops are allowed to work somewhat for their own profit, in the manufacture of articles for sale or use. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term-time, or from other sources, for the larger part of their expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

GROUND AND BUILDINGS.

Two farms of 171 and 100 acres, with the stock, orchards, gardens, vineyards, forestry, and ornamental grounds, are used for experiment and illustration. All that is not strictly experimental is managed with a view to highest economy and profit.

On the larger of the farms, upon an elevation at the western limits of the city of Manhattan, and facing toward the city, are the College buildings. All are of the famed Manhattan limestone, and surrounded by pleasantly arranged and planted grounds, as shown in the view opposite the title page, and upon the map accompanying the following description:—

College, of which the central building and north wing with connecting corridor are completed, and the south wing will be ready for use in September, 1884. This building contains now chapel, society room, offices, library, reading room, and class rooms for Agriculture, Math-

ematics, English, History, and Drawing. When fully completed, the building will be 130 by 250 feet in extreme dimensions, arranged in three distinct structures, with connecting corridors.

Chemical Laboratory, one story, 36 by 99 and 46 by 75 feet of floor space, in form of a cross. It contains eight rooms, occupied by the Department of Chemistry, Physics and Mineralogy, and the Printing office.

Mechanics' Hall, 39 by 103 feet, of two stories, occupied by the Carpenter shop and finishing room, Telegraph office, Music rooms, Sewing rooms and Kitchen Laboratory.

Horticultural Hall, 32 by 80 feet, one story and cellar, having cabinet room, class room, work room and storage, with greenhouse attached.

Dwelling of the President, a substantial stone farmhouse.

Armory Hall, 46 by 96 feet, and two stories. It was originally designed for a barn, but it is now used for the Armory and Drill room, the dwelling of the Farm Superintendent, and rooms for the Janitor and for a few students.

The barn is of stone, 48 by 96 feet, with side-hill basement stables, granary, tool-room, etc.

The blacksmith shop, piggery, implement shed, and various out-buildings, are of wood.

TERMS OF ADMISSION.

Applicants for admission at the beginning of the year, in September, must be at least fourteen years of age, and able to pass a satisfactory examination in reading, spelling, writing, arithmetic including percentage and interest, geography, and the elements of English grammar. Those applying later in the term must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of the term, in order to advance with the class from the first.

Applicants of mature age who, for lack of advantages, are unable to pass the full examination may be received on special conditions.

Applicants for advanced standing in the course must pass examination in all the previous studies of the class to be entered; but, if they have pursued such studies in other institutions of similar rank, they may receive credit for their standing in those institutions upon presenting a certificate from the proper officer, showing that their course has been equivalent to that given here.

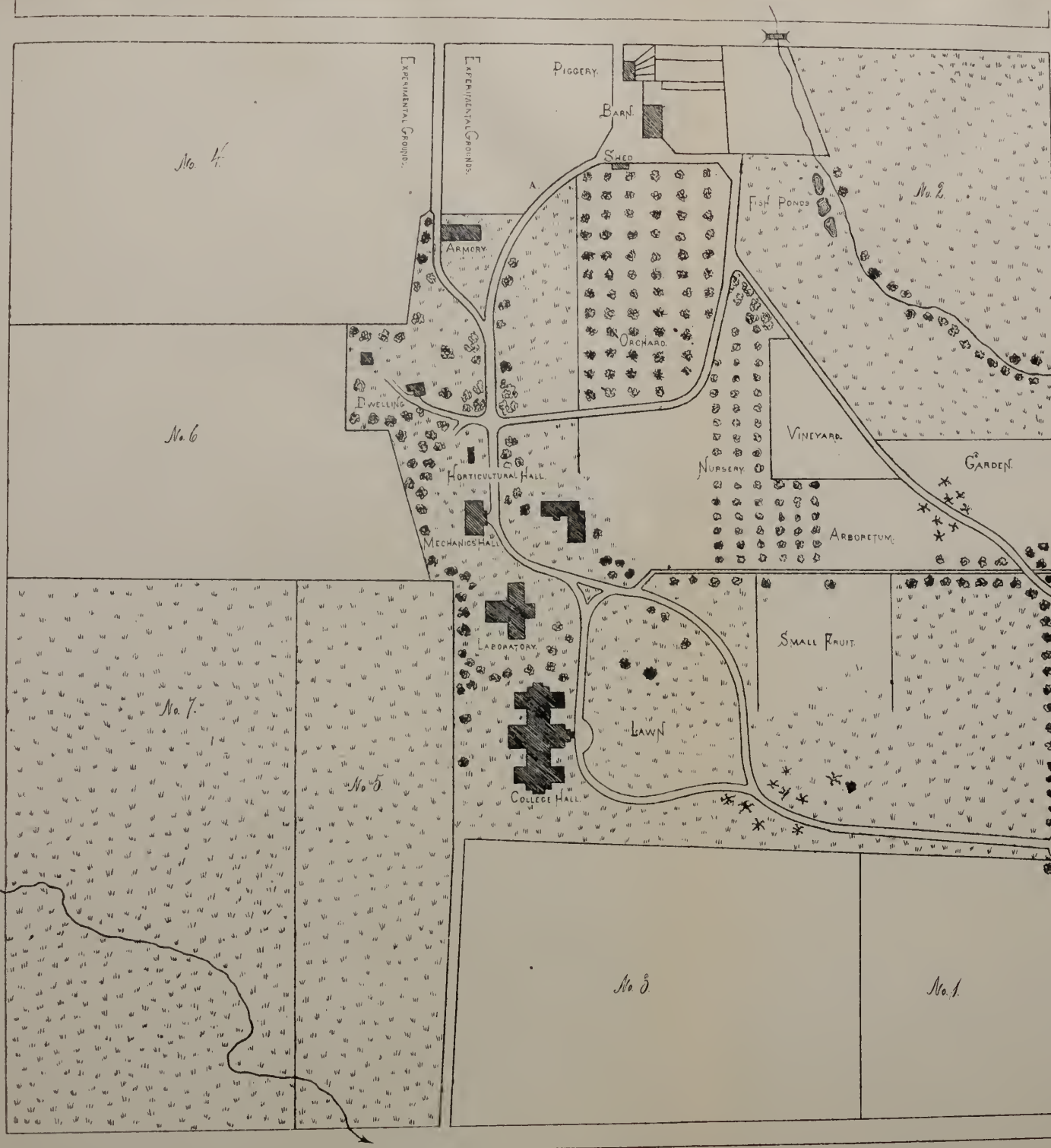
The following questions in arithmetic may serve as a sample of the usual examinations for admission:—

1. What is arithmetic? notation? numeration?

FARM GROUNDS

KANSAS STATE

Agricultural College



VATTIER STREET

Scale 1/4" = 4000'

2. Define dividend, divisor and quotient, and tell how to find each, the other two being given.

3. A speculator bought 1,200 bushels of corn at $56\frac{1}{4}$ cents a bushel. He sold $375\frac{1}{2}$ bushels at 60 cents a bushel. At what price must he sell the remainder to gain $\$168.67\frac{1}{2}$ on the whole?

4. A man had $225\frac{3}{8}$ dollars, and earned $\frac{1}{4}$ of $3\frac{1}{2}$ times $88\frac{1}{3}$ dollars more; having lost part of his money, he had $186\frac{3}{8}$ dollars remaining. How much did he lose?

5. A farmer wishes to build a bin to contain 480 bushels of wheat. If he makes it 14 feet long and 8 feet 4 inches wide, how high must it be to contain the wheat?

6. How much will it cost to carpet a room 17 by 20 feet with carpet 30 inches wide, costing \$1.40 a yard?

7. Sold a cow for \$37.50, and gained 25 per cent on the cost. What per cent would have been gained by selling her at \$50?

8. If by selling cloth at 75 cents a yard I gain $18\frac{3}{4}$ per cent on the cost, how much must I advance upon this price to gain $31\frac{1}{4}$ per cent on the cost?

9. Loaned \$257.80 on March 1st, 1879. What was due July 23d, 1882, interest at 7 per cent.

10. What is the bank discount on a note for \$600, due in 90 days, dated January 3d, 1884, and discounted January 20th, at 10 per cent?

COLLEGE BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

College Lands and all business connected with their sale are in charge of the Land Agent.

Bills against the College should be presented monthly, and, when audited, are paid from the office of the Treasurer, in Manhattan.

All Payments of principal and interest on account of bonds or land contracts must be made to the Treasurer, at Topeka.

The *Industrialist* may be addressed through Prof. E. M. Shelton, Managing Editor. Subscriptions are received by Supt. Geo. F. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, chairman of committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding places, etc.,—may be obtained at the office of the President.

TERMS AND VACATIONS.

FALL TERM, 1884.

Wednesday, September 10th.—Examinations for admission at 9 A. M.
Thursday, September 11th.—College year begins.
Friday, October 17th and November 14th.—Monthly examinations.
Thursday, December 18th.—Annual Exhibition of the Alpha Beta Society.
Thursday and Friday, December 18th and 19th.—Examinations at close of Fall Term.
December 20th to January 5th.—Winter vacation.

WINTER TERM, 1885.

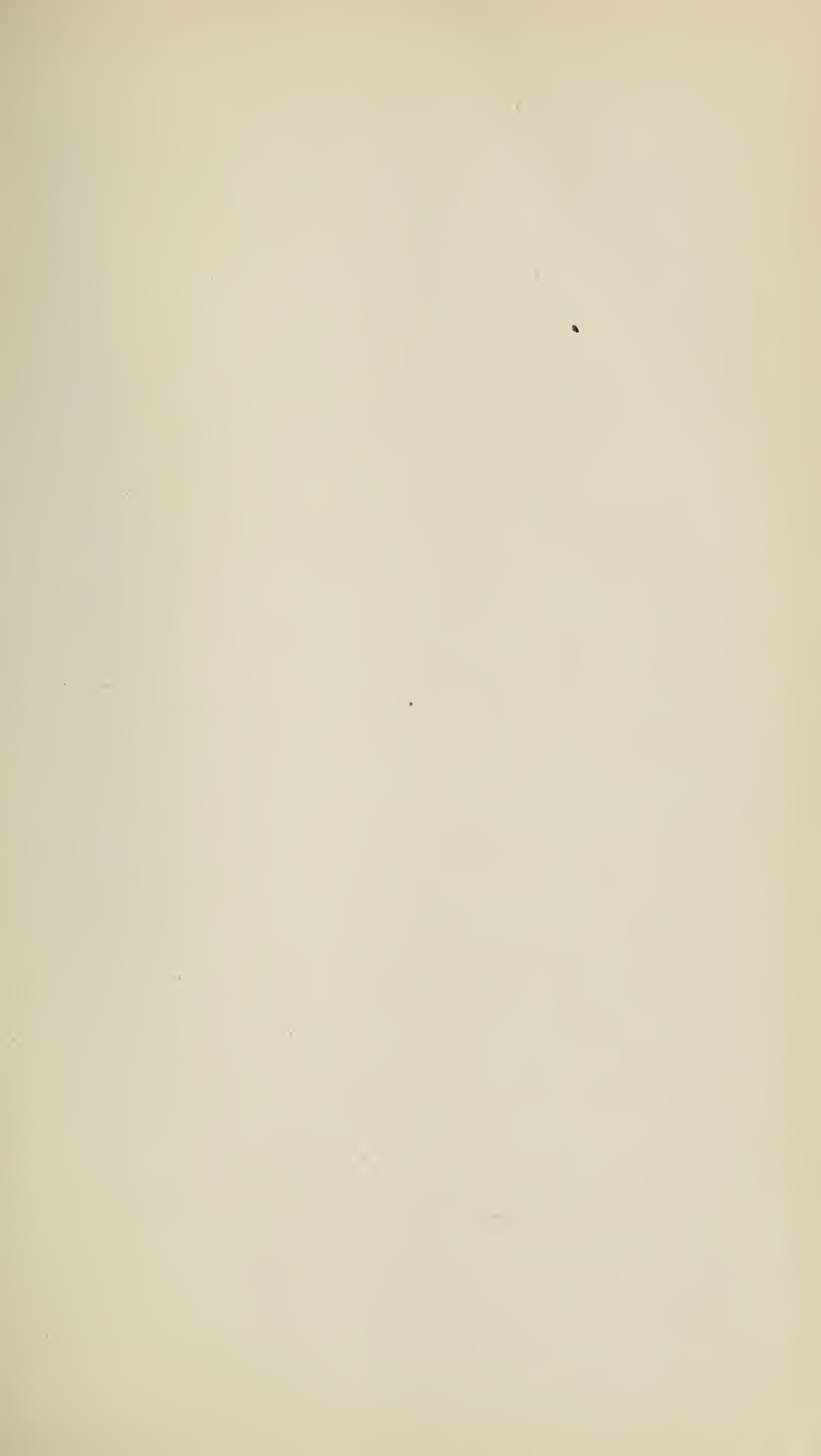
Monday, January 5th.—Examinations for admission at 9 A. M.
Tuesday, January 6th.—Winter Term begins.
Friday, February 13th.—Monthly examinations.
Thursday, March 26th.—Annual Exhibition of the Webster Society.
Thursday and Friday, March 26th and 27th.—Examinations at close of Winter Term.

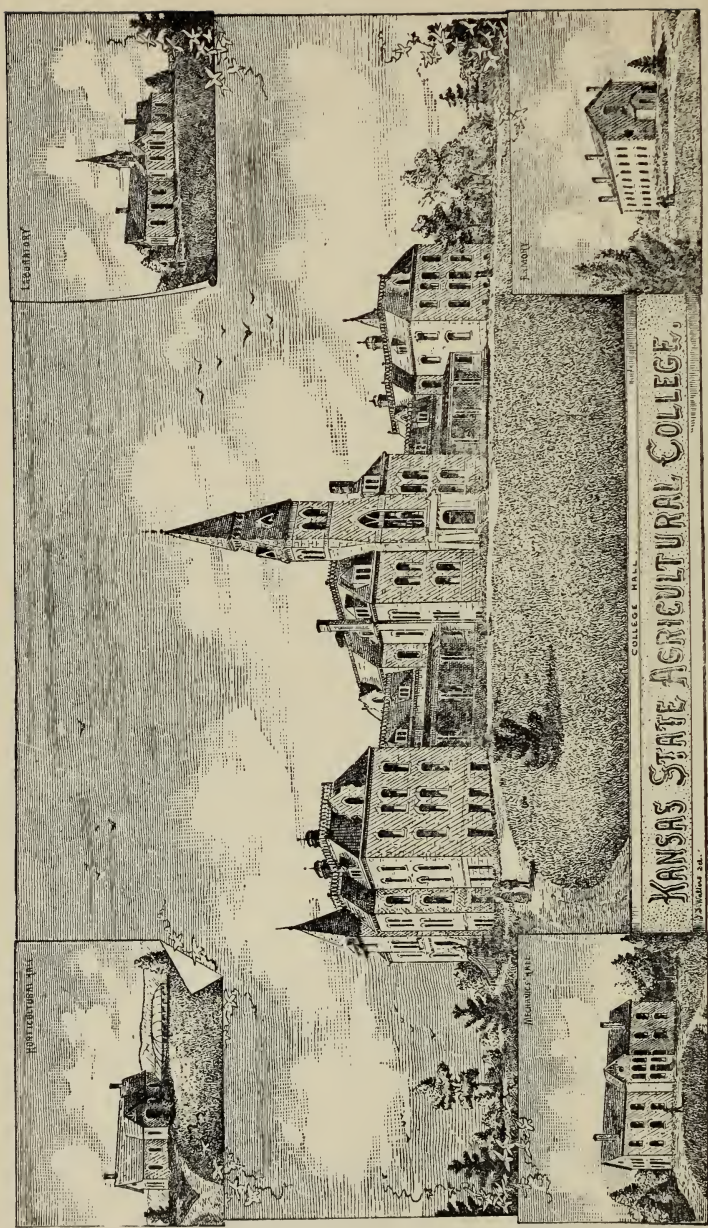
SPRING TERM, 1885.

Monday, March 30th.—Spring Term begins.
Friday, May 1st.—Monthly examinations.
Monday and Tuesday, June 8th and 9th.—Examinations at close of year.
June 7th to 10th.—Exercises of Commencement Week.
Wednesday, June 10th, 10 A. M.—Commencement.
June 11th to September 9th.—Summer vacation.

FALL TERM, 1885.

Wednesday, September 9th.—Examinations for admission at 9 A. M.
Thursday, September 10th.—College year begins.





KANSAS STATE AGRICULTURAL COLLEGE.

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Luther Van Doren,	Minneapolis, Ottawa.
Clarence Van Ness,	Emporia, Lyon.
George A. Van Ness,	Fort Reno, <i>Indian Territory</i> .
William Van Zile,	Carthage, <i>Illinois</i> .
Ella S. Walden,	Manhattan, Riley.
William R. Wallace,	Junction City, Davis.
Aaron Walters,	Lura, Russell.
George H. Warner,	Stockdale, Riley.
J. Winifred Westgate,	Manhattan, Riley.
Rodney D. Whaley,	Manhattan, Riley.
Oscar A. White,	Stockdale, Riley.
Charles Wickizer,	Kansas City, <i>Missouri</i> .
Lewis C. Wiley,	Howard, Elk.

George H. Wilkes,	Crainville, Republic.
Charles I. Wilson,	Edina, <i>Missouri</i> .
Edward E. Wilson,	Barclay, Osage.
Arthur Wood,	Elmdale, Chase.
Daniel W. Working, Jr.,	Logan, Phillips.
Alfred W. Wright,	Minneapolis, Ottawa.
Mary A. Yarrow,	Wakefield, Clay.
Flournoy C. Young,	Paw Paw, Elk.
George E. Young,	Paw Paw, Elk.
Edgar R. Yount,	Salina, Saline.

SPECIAL COURSE.

Stuart J. Hogg,	London, <i>England</i> .
James Taylor,	London, <i>England</i> .

NUMBER OF STUDENTS.

Classes:—	Gentlemen.	Ladies.	Total.
Resident Graduates,	2	3	5
Fourth Year,	11	5	16
Third Year,	24	12	36
Second Year,	43	28	71
First Year,	199	72	271
Special Course,	2		2
Total,	281	120	401
From 61 counties of Kansas,			363
From 14 other States,			38
Total			401

Objects and Methods.

ENDOWMENT.

An act of Congress, approved July 2d, 1862, gave to each State public lands to the amount of 30,000 acres for each of the Senators and Representatives in Congress according to the census of 1860, for the "endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, * * * in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

Under this act, the State of Kansas received 82,313.53 acres of land, and, in 1863, established the State Agricultural College, by endowing with these lands Bluemont College, which had been erected two miles from Manhattan under the auspices of the M. E. Church, but was presented to the State for the purpose named in the act of Congress. Of these lands, 81,993.53 acres are now sold, giving a fund of \$497,443.98, which is by law invested in bonds, the interest alone being used for current expenses of the College. There remain unsold 320 acres of land, lying in Dickinson and Washington counties appraised at \$3,360.

In 1873 the College was reorganized upon a thoroughly industrial basis, with prominence given to practical agriculture and related sciences; and in 1875, the furniture and apparatus of the College were moved to the farm of 171 acres, one mile from the city of Manhattan. On this fine location, the State has erected buildings valued at \$100,000, of which a description is given elsewhere. The farm and grounds, furniture, stock and other illustrative apparatus are valued at over \$50,000.

The annual income from the endowment fund, about \$35,000, meets all the expenses of instruction: the State provides, as the law requires, the necessary buildings, and expenses in management of funds.

OBJECTS.

This College now accomplishes the objects of its endowment in several ways.

First, it gives a substantial education to men and women. Such general information and discipline of mind and character as help to make intelligent and useful citizens are offered in all its departments, while the students are kept in sympathy with the callings of the people.

Second, it teaches the sciences applied to the various industries of farm, shops and home. Chemistry, botany, entomology, zoölogy and mechanics are made prominent means of education to quick observation and accurate judgment. Careful study of the minerals, plants and animals themselves illustrates and fixes the daily lesson. At the same time, lessons in agriculture and horticulture show the application of science; and both are enforced by actual experiment.

Third, it trains in the elements of the arts themselves, and imparts such skill as to make the hands ready instruments of thoughtful brains. The drill of the shops, gardens, farm and household departments is made a part of a general education to usefulness, and insures a means of living to all who make good use of it. At the same time, it preserves habits of industry and manual exertion, and cultivates a taste for rural and domestic pursuits.

Fourth, it strives to increase our experimental knowledge of agriculture and horticulture. So far as means and circumstances permit, experiments are undertaken with a view to more definite results than ordinary experience can give. By this method, the students themselves are trained to a more accurate observation and judgment in these practical tests of principles in farming.

Fifth, it seeks to disseminate such practical truths as have stood the test of scientific inquiry. For this purpose it publishes the weekly *Industrialist*; and its officers share in debates and consultations of farmers and horticulturists throughout the State. Each winter a series of six Farmers' Institutes is held in as many different counties of the State. In these the Faculty share with the people in lectures, essays and discussions upon topics of most interest to farmers.

COURSE OF STUDY.

The necessity for so adjusting various branches of a course of study that there shall be as little waste as possible in acquiring both information and discipline is felt by every teacher. Such a course is not designed to be absolutely inflexible, but to guide the judgment into

some definite line of progress from which no mere whim shall turn a student aside.

Each student is expected to take three studies besides one hour's practice in an industrial art; and variations from this rule can be made only with the consent of the Faculty.

Parallel courses are offered to both sexes, with such differences as their necessities seem to call for. The following gives the general scope of the two; but fuller explanations are found under OUTLINE OF INSTRUCTION:—

FIRST YEAR.

FALL TERM.—Arithmetic.

English Analysis.

Geometrical Drawing.

Industrial.

WINTER TERM.—Book-keeping.

English Structure.

United States History.

Freehand Drawing (3 hrs. a week).

Industrial.

SPRING TERM.—Algebra.

English Composition.

Botany.

Industrial (Carpentry or Sewing).

SECOND YEAR.

FALL TERM.—Algebra completed.

Elementary Chemistry.

Horticulture.

Fourteen lectures in Military Science.

Industrial.

WINTER TERM.—Geometry.

Agriculture or Household Economy.

Organic Chemistry and Mineralogy.

Twelve lessons in Military Science.

Industrial.

SPRING TERM.—Geometry completed, Mechanical Drawing.

Entomology.

Analytical Chemistry.

Industrial (Farm and Garden or Dairy).

THIRD YEAR.

FALL TERM.—Trigonometry and Surveying.

Anatomy and Physiology.

General History.

Industrial (Farm and Garden).

Industrial.

SPRING TERM.—Civil Engineering or Hygiene.
Chemical Physics.
English Literature.
Mechanical Drawing (2 hrs. a week).
Industrial.

FOURTH YEAR.

FALL TERM.—Agriculture or Literature.
Meteorology.
Psychology.
Industrial.

WINTER TERM.—Logic, Deductive and Inductive.
Zoölogy.
Structural Botany.
Industrial.

SPRING TERM.—Geology.
United States Constitution.
Political Economy.
Industrial.

INDUSTRIAL TRAINING.—Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training, each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening and Fruit-growing, Carpentry, Cabinet-making, Iron work, Printing or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and, during the spring term of the second year and the fall term of the third year, upon the farm, garden and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

Military Drill is optional in any term.

SPECIAL COURSES.—Persons of suitable age and advancement who desire to pursue such branches of study as are most directly related to agriculture or other industries, may select such studies, under the advice of the Faculty. Assaying and Pharmaceutical Chemistry may be provided for by special arrangement, when students are qualified to pursue them.

CLASS HOURS, 1885-86.

CLASS HOURS, 1885-86.												
HRS.		FIRST YEAR.				SECOND YEAR.				THIRD YEAR.		FOURTH YEAR.
		FALL TERM, Fourteen weeks.		WINTER TERM, Twelve weeks.		SPRING TERM, Eleven weeks.						
I.	Arithmetic.	English.	Industrials.	Book-keeping.	Industrials.	U. S. History.	Industrials.	Horticulture.	Algebra.	General History.	Meteorology.	
II.	Drawing.	Arithmetic.	Drawing.	English Structure.	Book-keeping.	Chem. Practice. Military Science.	Horticulture.	Chemistry.	Physiology.	Industrials.	Psychology.	
III.	English.	Drawing.	English Structure.	Book-keeping.	Chem. Practice. Military Science.	Industrials.	Chem. Practice. Military Science.	Industrials.	Trigonometry and Surveying.	Surveying Practice.	Agriculture. Literature.	
IV.	Industrials.	Industrials.	Industrials.	Industrials.	Industrials.	Industrials.	Industrials.	Industrials.	Industrials.	Industrials.	Industrials.	
V.	Industrials.	Industrials.	Industrials.	Industrials.	Industrials.	Industrials.	Industrials.	Industrials.	Industrials.	Industrials.	Industrials.	
I.	Industrials.	Composition.	Botany.	Composition.	Botany.	Drawing 5 weeks. Geometry.	Entomology.	Hygiene.	U. S. Constitution.			
II.	Botany.	Industrials.	Botany.	Composition.	Botany.	Entomology.	Chemistry 5 w'ks. Drawing.	Chemical Physics.	Political Economy.			
III.	Algebra.	Composition.	Algebra.	Composition.	Algebra.	Chemistry 5 w'ks. Drawing.	English Literature.	Engineering.	Geology.			
IV.	Composition.	Algebra.	Composition.	Composition.	Algebra.	Chemistry 5 w'ks. Drawing.	English Literature.	Engineering.	Geology.			
V.	Composition.	Algebra.	Composition.	Composition.	Algebra.	Chemistry 5 w'ks. Drawing.	English Literature.	Engineering.	Geology.			

All students meet in Chapel at 8:30 A. M., except Saturday and Sunday. The time from 8:30 A. M. to 1 P. M. is divided into five "hours," as above; and a system of electric bells calls the classes in all the buildings at once.

Military Drill two or three times a week at the fifth hour.

Public exercises or class rhetorical on every Friday at 1:30 P. M.

POST-GRADUATE COURSES.—Arrangements can be made for advanced study in the several departments at any time. Special opportunities for investigation and research will be afforded at all times to resident graduates in Agriculture and Agricultural Chemistry, Physics and Chemistry, Horticulture and Botany, Zoölogy and Entomology, Mathematics, Engineering and Drafting. Every facility for advancement in the several arts taught at the College will be given such students, though they are not required to pursue industrial training while in such courses.

DEGREES.—The degree of Bachelor of Science is conferred upon students who complete the full course of four years and sustain all the examinations.

The degree of Master of Science is conferred in course upon graduates of three years' standing who give evidence of advancement in the application of science to the arts of practical life, and present an acceptable thesis upon some topic assigned by the Faculty. A copy of each thesis is to be deposited at the College.

OUTLINE OF INSTRUCTION.

AGRICULTURE.—*Second Year.*—History of agriculture, showing the successive steps by which the art has attained its present position. History and characteristics of breeds; their adaptation to the varying conditions of soil, climate and situation; study of the forms of animals, as shown by the different breeds belonging to the College: the relation of stock-raising to general farming. Cultivation of hoed crops; management of corn and roots with reference to stock-feeding and the growth of the finer grains. The growth of the "tame grasses" in Kansas; the best sorts for the State, and their management, as shown by experience on the College Farm and elsewhere. Implements of simple tillage; mechanical principles involved in their construction. Application of labor. Draught; different adjustments, as affecting draught; use of the dynamometer. Plows for soil and subsoil. Drainage; soils that need draining; how to lay out a system of drains.

Fourth Year.—General principles governing the development of domestic animals. The laws of hereditary disease,—of normal, abnormal and acquired characters; atavism; correlation in the develop-

ment of parts; in-and-in breeding and cross breeding; influences affecting fecundity. The selection and arrangement of the farm with reference to the system to be pursued. Rotation of crops; general advantages of a rotation; the best rotation for the distribution of labor, production of manure, and extermination of weeds. Planning farm buildings,—barns, piggeries and stables. Manure,—how best housed and applied; composting; commercial fertilizers. Agricultural experiments; field and feeding experiments. Stock-feeding and meat production; stall-feeding; soiling. In this, Miles's Stock-Breeding is supplemented by a course of lectures.

Veterinary Science.—Short courses of lectures in general principles of veterinary science are provided for young men of the second and third years.

Books of Reference.—Journal of the Royal Agricultural Society of England, Morton's Cyclopedia, Low's Practical Agriculture and Domesticated Animals, Fleming's Veterinary Obstetrics, Ribot on Heredity, Farmer's Calendar, Allen's American Farm-Book, The Complete Grazier, Stephens's Book of the Farm, Thomas's Farm Implements, Waring's Draining for Profit and Health, the reports of our own and other State Boards of Agriculture, and Shorthorn, Scotch Polled, Jersey and Berkshire Herd-Books.

HORTICULTURE.—It is the aim to teach this art from a botanical basis. The student applies his knowledge of the prime facts in botanical physiology to the various operations of the nursery, orchard and farm. Barry's Fruit Garden is used, supplemented by a series of lectures upon the following topics, among others: The scope of Horticulture. General principles of propagation,—by buds, by seeds. Production of improved varieties,—by careful selection of seeds, by interfertilization of known kinds. Perpetuation of valuable sorts of fruits by bud propagation,—budding, grafting, layering, etc. The important points in nursery manipulation. The orchard; conditions of site, soil, exposure, elevation. Special treatment of different kinds of fruit trees. Pruning. Gathering and storing fruits. Small-fruit culture; lists of varieties suitable for Kansas planting. Vegetable garden; selection and preservation of seeds; planting and transplanting. The management and use of the hot-bed and cold-frame. Forest plantations. Wind-breaks. Hedges. Trees and shrubs for ornamental planting.

Books of Reference.—The horticultural works of Downing, Warder, Fuller, Thomas, Loudon, Henderson, and other standard authorities. The Horticultural Reports of the States of Kansas, Michigan, Illinois, Iowa, Missouri, Massachusetts and others. In Landscape Gardening, the works of Downing, Weidenmann and Kemp.

BOTANY.—During the College course, two terms are given to the study of Botany.

Elementary Botany.—In the spring term of the first year, the organs of plants are first studied, after which the minute anatomy is

briefly considered. This is followed by a study of vegetable physiology. The classification of plants and vegetable products and their uses are other important topics of the course. During the latter part of the term, a number of flowers are analyzed, and a few plants collected and prepared for the herbarium. Each student is required to provide himself with a pocket lens, under the direction of the Professor in charge. Text-book, Kellerman's Elements of Botany and Plant Analysis.

* *Advanced Botany*.—In the winter term of the fourth year, the minute structure of plants, as well as vegetable physiology, is studied more fully. This includes an examination of the vegetable cell, its parts, modifications and products, and of tissue as presented in its various forms. This is made the basis for more detailed work on special subjects, among which may be mentioned germination, development of tissues, protoplasm, starch, parasitic fungi, especially the moulds, smuts, rusts, etc., and other cryptogamic plants. Each student has the use of a compound microscope, and works two hours daily in the botanical laboratory. While this course is intended primarily to furnish a foundation for applied botany in horticulture and agriculture, it also affords, to some extent, the advantages of systematic observation and original investigation. A good herbarium and a large greenhouse are drawn upon for material for study.

Books of Reference.—The works of Sachs, Gray, Lesquereux, Sullivant, Engleman, Tuckerman, Cooke, Berkeley, Darwin, Baxter, Bessey and others.

CHEMISTRY.—*Inorganic Chemistry*, which occupies fourteen weeks of the second year, includes a consideration of chemical force and of the laws of chemical combination with nomenclature and formulas, and a careful study of the history, manufacture, physical, chemical and physiological properties, tests and uses, of the various elements and their compounds. Especial attention is given to those substances having extended application in the arts. In addition to the usual lecture-room experiments, the student repeats, as far as practicable, all this experimental work at his private work-table.

Organic Chemistry comprises a six-weeks course of lectures upon the preparation and properties of those organic substances most useful to man.

In *Chemical Analysis*, each student has his stand in the Qualitative Laboratory, completely furnished with apparatus and chemicals for his own use. His work includes the analysis of more or less complex mixtures of chemicals, minerals, ores, soils, mineral waters, well waters, etc. The time given to this work is two hours daily for eleven weeks.

AGRICULTURAL CHEMISTRY.—This includes a thorough consideration of the application of chemical principles to the economy of the farm; the origin and formation of soils; the classification and com-

position of soils; the analysis of soils and their adaptation to purposes of production; the composition and use of manures; composting; chemistry of farm operations,—such as plowing, fallowing, draining; chemistry of plant growth. Text-book, Elements of Agricultural Chemistry (Johnston & Cameron).

Books of Reference.—In general chemistry, Roscoe, Schorlemmer, Miller, Storer, Cooke, Strecker, Bloxam, Remsen, Frankland. In applied chemistry, Paul & Payen, Wagner's Technology, Crookes's Metallurgy, Richardson & Watt's Technology, Muspratt's, Watts's Dictionary. In Chemical Analysis, Fresenius, Thorpe, Blyth, Prescott, Wanklyn, Tucker and Naquet; Sutton's Volumetric Analysis, Crookes's Select Methods, Journal of the Royal Agricultural Society, Reports of experiment stations, current scientific journals.

MINERALOGY.—For six weeks in the second year, two hours a day are given to mineralogy. This includes the study of crystallography, with the properties, forms and uses of the principal minerals of the United States. Blow-pipe analysis forms an important part of the course, each student being required to identify and name a large series of minerals. The pocket lens required in botany classes is used in this study. Text-book, Dana's Mineralogy and Lithology.

Books of Reference.—The works of Dana, Plattner and Elderhorst.

PHYSICS AND METEOROLOGY.—Two terms' work gives an opportunity for experimental study of the laws of heat, light, electricity and magnetism; the constitution of the atmosphere; the measurement of temperature and humidity; atmospheric pressure. Text-books, Miller's Chemical Physics and Loomis's Meteorology. This course also includes a careful study of instruments and methods employed in taking meteorological observations.

Books of Reference.—The works of Deschanel, Gañot, Tyndall, Faraday, Helmholtz, Grove, Gordon, Thompson, Stewart, Siemens and Maxwell.

GEOLOGY.—This includes a general consideration of the earth's features, the constitution of rocks, and the arrangement of rock-masses; the causes or origin of events in geological history; the order of succession in the strata of the earth's crust, and of the organisms that existed and of the changes that were going on during the formation of each stratum. Prominence is given to facts having an economic bearing. The formation of soils, and deposits of valuable minerals, especially in Kansas, are considered. Le Conte's Compend of Geology is used.

Books of Reference.—The works of Dana, Le Conte, Geike, and the various geologic surveys.

ANATOMY AND PHYSIOLOGY.—Human anatomy is made the basis of a thorough study in physiology and hygiene.

the nervous system; and the special senses. The course embraces, to some extent, Comparative Anatomy and Physiology, affording preparation for the study of stock-breeding and Zoölogy. Martin's Human Body is used as a text-book.

Books of Reference.—Dalton's Human Physiology, Carpenter's Human Physiology, Hunt's Physiology of Man, and Gray's Anatomy.

SPECIAL HYGIENE.—To the ladies of the third year, a course of daily lectures is given upon the laws of life and health. The course extends over a period of ten weeks, and covers questions pertaining to personal health and the health of the household,—such as food, air, exercise, clothing, temperature of rooms, and care of sick-room.

Books of Reference.—Health and its Conditions (Hinton), Lungs (Dio Lewis), Hand-book of Nursing, Dictionary of Hygiene (Blythe and Tardien).

ENTOMOLOGY.—This science is studied with special reference to its economic relations with agriculture and horticulture. A brief course in the principles of classification is followed by a more extended study of the life-history of beneficial and injurious insects, and means of encouragement of one and the control of the other.

The instruction is presented in the form of lectures. Illustrations are furnished from the individual collections of the students, and from the entomological collections belonging to the College. Charts and drawings from nature are used to illustrate points of value in classification. The pocket lens used in botany is required in this study.

Books of Reference.—Packard's Guide to the Study of Insects, Harris's Insects Injurious to Vegetation, Riley's Reports, LeBaron's Reports, Fitch's Reports, Thomas's Reports, Reports of the U. S. Entomologist, Transactions of the American Entomological Society, Canadian Entomologist, Psyche and others.

ZOÖLOGY.—In this study, Orton's Zoölogy has been adopted as a text-book. The intention of the course is to familiarize the student with the characters of some type in each class, and then, by comparative study, with the chief modifications of the type chosen. Especial attention is given to comparative anatomy and physiology. A good collection of animals, birds, reptiles and fishes, both mounted and alcoholic, a collection of invertebrates in alcohol, and a fine collection of conchological specimens, are among the means of illustration. Dissection and work with the microscope accompany the study.

Books of Reference.—A selection of standard works, including those of Agassiz, Huxley, Gegenbaur, Balfour, Foster, Darwin, Wallace, Packard, Coues, Baird, Jordan and others.

ARITHMETIC.—In the first year, one term is given to a general review of arithmetic. Practical measurements and the various appli-

cations of percentage receive special attention. Such forms of solution are required as lead to logical analyses. Two objects are aimed at in this course: first, to give a practical knowledge of the computations used in ordinary business life; second, to secure the mental discipline so necessary to the study of higher mathematics. Text-book, Brooks's Union Arithmetic.

BOOK-KEEPING AND COMMERCIAL LAW.—Beginning with a simple cash account, Book-keeping is developed through all the principles of single and double entry. Considerable time is given to those forms best adapted to farm and business life. Each student provides a full set of blanks, and keeps a regular set of books, in which accuracy of calculation and posting, and neatness of execution, are regarded as essential as correct understanding of the principles.

In addition to this term's work in Book-keeping, a practical course in Commercial Law is given, including contracts, sale of personal property, negotiable paper, interest, agency, partnership, bailment, common carriers of freight and passengers, the law of host and guest, real estate, and the forms of business paper. Text-book, Nihart's Book-keeping and Commercial Law.

Books of Reference.—Townsend's Commercial Law, Mayhew, Duff and Bryant.

ALGEBRA.—Two terms are devoted to the study of Algebra. In the first the student is thoroughly drilled in algebraic notation, the fundamental rules, the secondary operations of composition and factoring, and the simple form of the equation. The second term is devoted to the various transformations and applications of the equation,—simple, quadratic, radical, etc. The equation thus becomes a most important instrument for solving the problems of practical life in which quantity is an item; for demonstrating theorems in geometry and trigonometry; and for the construction of formulas for the use of the engineer and artisan. Text-book, Wentworth's Algebra.

Books of Reference.—Newcomb, Schuyler, Wells, Todhunter.

GEOMETRY.—In geometrical drawing of the first year, the student has already become familiar with geometrical forms and their construction. The winter term of the second year is devoted to plane geometry. Half of the spring term is then given to solid and spherical geometry. Throughout the course, practical problems involving the principles demonstrated are given to the class. Text-book, Wentworth's Geometry.

Books of Reference.—Chauvenet, Warren and others.

TRIGONOMETRY AND SURVEYING.—The principles of plane trigonometry, involved in mensuration and surveying, are first mastered. Surveying includes theory; adjustment and use of instruments; history and methods of U. S. Government surveys; areas of land; dividing land; retracing old land; platting; topographical surveying; railroad surveying; leveling,—section and cross section; field practice

with transit, compass, chain, level and rod. A map of the College farm, the data of which are gathered during the fall term, is drawn by each student during the winter term. Text-book, Ray's trigonometry and Surveying.

Books of Reference.—Gillespie, Reports of the U. S. Land Office.

MECHANICS AND ENGINEERING.—A careful consideration of the laws of motion and force as exhibited in all kinds of machines and various phenomena of nature, occupies a single term. Another term is given to study of proper materials for buildings, their construction and durability; forms of roofs and bridges; care and use of machinery; and roads and road-making. Draughting is an essential feature of the work. Text-books, Peck's Mechanics, Mahan's Civil Engineering.

Books of Reference.—Rankine's Mechanics. Hand-books of Engineering, Knight's Mechanical Dictionary.

DRAWING.—This study is required in four terms, of which two are in the first, one in the second, and one in the third year.

First term.—Daily lessons for fourteen weeks. Definitions of lines and geometrical figures; judging and measuring lines and angles; construction of perpendiculars to given lines, of triangles, four-sided figures and polygons, of the circle and its secant lines, of ellipses, ovoids, ovals, parabolas, hyperbolas, and various geometrical ornaments; use of drawing board, T-square and water colors; conventional representation of building materials. Prof. Morse's first two books on Mechanical Drawing are used as text-books. Each student is required to have a pair of compasses and attachments.

Second term.—Freehand drawing three hours a week for twelve weeks. After the study of Nos. 3, 4 and 5 of White's Text-books of Art Education, drawing from nature is taken up. Leaves, flowers and fruits are taken as subjects, and placed in such positions that the perspective will not interfere seriously with a correct perception of form. Each student is required to finish a set of drawings. Lectures on principles and history of ornamentation are occasionally given.

Third term.—Mechanical drawing five weeks. Projection of the straight line and the circle; intersection of geometrical solids; construction and development of the most common regular curves. Principles of shades and shadows. Books 3 and 4 of Morse's Mechanical Drawing.

Fourth term.—Mechanical drawing twice a week for ten weeks. Principles of parallel and angular perspective. Books 5 and 6 of Morse's Mechanical Drawing. Each student is required to draw and color a set of plans for a farm building, or give details of some farm machine.

During the winter term of the third year each student is required to

to draw, color, ink and letter a large map delineating the surveys made during the fall term.

Students who show special aptitude are encouraged to take drawing as a fourth study during any part of the course, and are given every opportunity to fit themselves for the draughting office, or for special art schools. The instruction includes an extended course in freehand drawing, shading, coloring, architectural and mechanical drawing.

Books of Reference.—Warren's Descriptive Geometry, Walter Smith's Manuals on Art Education, Woodward's National Architect, Guild's American Stair-builder, Andre's Hand-book of Topographical Drawing, Davies's Shades and Shadows, Gwilt's Cyclopedia of Architecture, Prang's Art Atlas, Lübke's History of Art, Steinhauser's Room Decoration, Van Bezoldt's Theory of Color.

ENGLISH LANGUAGE AND LITERATURE.—*First Year.*—The study of English Grammar is made to serve directly in securing clear perception and correct expression. Such practice in analysis and parsing as may give the student a clear idea of the English sentence in all its parts is associated with frequent exercises in expression and criticism. Under English Structure is included a careful study of words and their elements,—roots, stems, prefixes and suffixes. The most fruitful roots from the Saxon, Latin and Greek are learned, and also the laws governing the changes in the letters of roots in forming derivatives. Lectures are given upon the origin and history of the English language. At the same time, the daily exercises are made a means of training in spelling, pronunciation and definition. Text-books, Reed & Kellogg's Higher English Lessons, Swinton's Word Analysis.

Principles and methods in English Composition are then taken up, with Kellogg's Rhetoric for a text-book. Numerous exercises and revisions familiarize the students with the essentials of neat, legible manuscript, and clear, forcible expression.

Each class meets once every fortnight for drill in elocution and composition.

Third Year.—One term is given to the study of Higher Rhetoric, embracing the principles of clear explanation and convincing argument, as well as the outlines of sound criticism, as presented in A. S. Hill's Rhetoric. This is followed by a term spent in the History of the English language and literature, with abundant illustrations from the best authors.

Students are led in this way to appreciate the power of our mother-tongue, and at the same time to gain a slight acquaintance with the best thoughts of the world. Students are encouraged and directed in the use of the College Library, and are under constant oversight in the expression of their thoughts in writing. Original declamations, carefully prepared and delivered before the students and Faculty, make a part of the drill in the higher classes.

In the course for young women, the first term of the fourth year gives training in the elements of criticism and good taste by a critical study of famous works in English and American Literature.

Books of Reference.—Goold Brown's Grammar of English Grammars, Marsh's Lectures on the English Language, Whitney's Life and Growth of Language, DeVere's Studies in English; Allibone's Dictionary of Authors, Hallam's Literature of Europe, W. D. Adams's Dictionary of English Literature, C. K. Adams's Manual of Historical Literature.

HISTORY AND POLITICAL ECONOMY.—In the first year the study of United States History occupies one term, and special attention is given to the form and growth of the government under which we live.

In the third year a term is given to General History, with Swinton's Outlines as a text-book. The world's progress in science, literature and art is carefully traced, with its causes.

In the fourth year, a careful study of the Constitution of the United States, with Cooley's Principles of Constitutional Law as a text-book, shows the general principles of government, its means and methods, illustrated by historical references.

The study of Political Economy, in a full term of the fourth year, gives a fair presentation of subjects connected with production, distribution and consumption of wealth. Chapin's Wayland's Elements is the book of daily reference, while the instruction is given by lectures. Pains is taken to compare conflicting views, and point out sources of information on all sides of vexed questions, without bias or prejudice.

Books of Reference.—Guizot's Civilization, Bancroft's United States, Hume's, Macaulay's and Green's England, Guizot's France, and a good library in general history. In Political Economy, works of Adam Smith, Mill, Fawcett, Cairnes, Walker, Bowen, Carey and Thompson.

HOUSEHOLD ECONOMY.—A series of lectures to the ladies of the second year continues through a term of twelve weeks. These cover the subjects of marketing, the chemistry of cooking, order, neatness and beauty in housekeeping, and comfort of a family. The class spend one hour each day in the kitchen laboratory, and cooking is done by each student.

References.—Dr. Pavy, Miss Acton, Miss Dodds, Miss Parloa and Miss Youmans.

LOGIC AND PHILOSOPHY.—The art of reasoning correctly is aided by a study of systematic logic, both deductive and inductive. Special prominence is given to methods for exact observation and experiment, and correct principles for classification. The previous researches and experience of the student are made to illustrate these principles. Text-book, Jevons's Lessons in Logic.

A short course in Psychology gives the general principles of intellectual and moral philosophy. Perception, understanding, reason, feeling and volition are topics of explanation and analysis. Theories of right and wrong, and correct principles of action, are made the means of a clear understanding of individual rights and duties. Hopkins's Outline Study of Man forms the basis of the course.

Books of Reference.—Mill's, Jevons's and Fowler's Logic, Bascom's Psychology, Porter's Human Intellect, Fairchild's Moral Philosophy, Cousin's "The True, The Beautiful and The Good," and works of Spencer, Hamilton and others.

INDUSTRIAL ARTS.—The training in these departments is designed to be systematic and complete in each, so that any student, following a single line diligently through the four-years course, gains the essentials of a trade and a reasonable degree of skill. Those who wish only a general acquaintance with the arts can take shorter courses in several of them; but all are to select with a definite purpose. In the established course, young men are required to take the regular term in the carpenter shop and on the farm and gardens, whatever the industrial chosen; young women are required to give one term to sewing, one to practice in the kitchen laboratory, and one in the dairy.

Dairying.—During the spring term, daily instruction and practice in the different branches of dairying is given the ladies of the second year by the Instructor in Household Economy. Here the regular daily work is supplemented by a short course of lectures intended to explain the best practices in the arts of butter and cheese-making, and to give the reasons therefor. The following topics cover, in the main, the instruction given the class: Influences affecting the quality and quantity of milk; butter-making; the household and factory systems of cheese-making; creameries; "deep" and "shallow" setting systems; packing and preserving butter.

Agriculture and Horticulture are required of young men as industrials during one term of the second year and one term of the third year. In these, practice is made to illustrate and emphasize the teaching, and covers essentially the same ground.

Work in Wood and Iron.—All students enrolled in classes for wood work will be given lessons in sawing and planing to test their skill, and advanced as fast as their work will warrant. Students who desire to learn the trade of carpentry will be given work in the direct line of that trade as far as possible. Work on roofing, framing, bridge work and stair-building will be done by models. Careful instruction will be given in sharpening, fitting up, and taking general care of all tools required in the work. Carpentry is required of young men during one term of the first year.

In iron work, instruction is given in ordinary work,—forging, filing, tempering, etc.

Printing.—Two courses are pursued in this art. In one the student is taught the implements or tools employed in typography, and how to use them; composition; imposition; correcting proof; technical terms; presses and their workings; and the general duties of a first-class workman. Everyone is encouraged in the study of the rise and progress of printing and related arts. Habits of accuracy and thoroughness are required, in order to advancement. The second course of lessons, alternating with those in the first, embraces instruction in spelling, capitalization, syllabication, punctuation, proof-reading, preparation and criticism of essays, and such other work as will make the student accurate and expert in language. Wilson's Punctuation is the text-book; but much of the instruction is oral,—such as grows out of the every-day experience of the office.

Admirable drill is furnished by the *Industrialist* to all, but especially to those who take the full course. The printing which the departments of the College require gives to the advanced student a fair knowledge of the principles and practice of job work.

Books of Reference.—MacKellar's American Printer, Harpel's Typograph, Rounds's Printers' Cabinet, Ringwalt's Encyclopedia of Printing, DeVinne's The Invention of Printing, DeVinne's Printers' Price List, and standard works on grammar and rhetoric.

Telegraphy.—The course of training involves for beginners the characters that compose the alphabet, and combination of these characters into words and sentences. Attention being paid to spelling and to short and precise expression in messages,—abbreviations, signals, forms of messages, train orders, reports, etc. To the more advanced is given regular line business,—as press reports, messages, cypher messages, and orders in all forms used by prominent telegraph companies, together with the necessary book-keeping, upon exact copies of blanks in actual use, thus giving the student an understanding of the work of an operator. A portion of the time is devoted to instruction in the use and management of lines, batteries, instruments, etc. The elementary principles of electricity, magnetism and electro-magnetism involved in telegraphy are taught and illustrated by experiments. The more recent inventions relating to the art are discussed and explained. Pope's Hand-book of the Telegraph is used as a text-book.

Books of Reference.—Prescott's Electric Telegraph, Morse's Telegraphic Apparatus, Culley's Telegraphy, and the works of DuMoncel, Clark & Sabine, Davis & Rae, Mandet, Jenkins, Harris, with the *Journal of the Telegraph* and the *Electrical Review*.

Sewing.—Young ladies are taught in all ordinary forms of sewing with needle and machine, and in cutting, fitting and trimming dresses and other garments. A straight-line system of cutting and fitting is taught, and systems are furnished to the students at wholesale rates. They may furnish materials, and work for their own advan-

age during the hour of practice, under the direction of the Superintendent. One term of sewing is required before the completion of the first year.

Instrumental Music.—Provision is made for the teaching of music upon instruments of all sorts. A full course upon the organ or piano extends over four years, including harmony and composition; but students may take lessons for a single term if they choose. The College furnishes the instrument for daily practice, but the instruction is paid for at the usual rate, as given under Expenses.

All students are furnished instruction in vocal music free of charge, under the direction of the Faculty.

MILITARY TRAINING.—During the second year, a course of twenty-six lessons is given. Fourteen of these are designed to show what an army is for, its relation to the country, and, in a general way, to describe its organization and duties. The remaining twelve are devoted to the consideration of Todd's "Campaigns of the Rebellion."

To those who desire it, an opportunity is given for practice in the ordinary infantry drills, including bayonet and sword exercise and target practice. Although drill is thus made optional, students are not allowed to take it for periods shorter than one term. To obtain proper proficiency, however, one should take the tri-weekly drill for at least a year.

The College battalion is divided into companies, which are officered by students appointed by the Professor in charge with the approval of the President.

Arms and accoutrements are furnished by the Government, the students being required to keep such as they use in proper condition. Uniforms for use in drill are furnished by the College.

Books of Reference.—Wilhelm's Military Dictionary, Hamley's Operations of War, Upton's Armies of Asia and Europe, Scribner's Series of Campaigns of the Civil War, Comte de Paris's History of the Civil War in America.

LABOR.

Every encouragement is given to habits of daily manual labor during the College course. Only the one hour of daily practice in industrial departments is required; but students are encouraged to make use of other opportunities for adding to their ability and gains.

The College employs students, when possible, on the farm and in gardens, shops and offices, paying wages varying in rate with accomplishment from eight to ten cents an hour. All labor at the College is under the direction of the Superintendent.

ents of the departments, and offers opportunity for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed. A few students who have shown especial efficiency are employed during the summer vacation.

The shops and offices are open afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character by both precept and example, and expected "upon honor" to maintain a good repute. Failure to do so is met by prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week-day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship and deportment shows to each student his standing in the College. After each monthly examination a report of advancement is made to parents; and any student, upon leaving College at the close of a term, may receive a certificate of standing.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Twice in each month the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third and fourth-year classes. On alternate weeks all the classes meet at the same hour, in separate class-rooms, for exercises in elocution and correct expression.

There are three prosperous literary societies, two of them of many years' standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta* is open to both sexes, and holds its meetings Friday afternoons. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the first Friday evening of each month.

Every Friday evening a students' prayer meeting is held in a College Society Room, led by a member of the Faculty. On the Sabbath students are expected to attend services at least once in the different churches of the city.

Occasionally during each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

The Manhattan Horticultural Society meets monthly, and other farmers' associations occasionally, at the College, and the students have the privilege of attending these meetings.

MEANS OF ILLUSTRATION.

AGRICULTURE.—Two farms of 171 and 100 acres, for the most part surrounded by durable stone walls, subdivided into fields of variable size to suit the system of management.

A large variety of standard experimental grains in cultivation in fields and experimental plats.

A well-planned barn for grain, hay, horses and cattle; and a pig-gery of six pens, with separate yards.

Shorthorn, Aberdeen-Angus, Galloway and Jersey cattle; Berkshire, Poland China, Jersey Red and Essex swine.

Farm implements of improved patterns.

Collections of grains, grasses and forage plants.

HORTICULTURE.—Orchards, containing 275 varieties of apples, 80 of peaches, 50 of pears, 16 of plums, 20 of cherries and 10 of apricots.

Small-fruit garden, with 200 varieties of small fruits, including blackberries, raspberries, gooseberries, currants and strawberries; and vineyard with 100 varieties of grapes.

Forest plantation of twelve acres, containing twenty varieties of from ten to fifteen years' growth.

Ornamental grounds, set with a variety of evergreen and deciduous trees. Sample rows, containing about 150 varieties of ornamental and useful shrubs and trees, labeled.

Vegetable garden, with hot-beds and cold-frames and experimental beds. Practice rows for students' budding, grafting, cultivating and pruning.

A well-planned and furnished greenhouse of three rooms, stocked with a collection of native and exotic plants.

CHEMICAL LABORATORY, with eight rooms, fitted with tables and apparatus for a class of eighty students; also, physical apparatus, meteorological instruments, and apparatus for advanced chemical work and assaying.

MODELS, PLASTER CASTS AND PATTERNS for drawing, and charts for illustration.

BOTANICAL MUSEUM, containing a good herbarium, fairly representing the flora of the United States; a collection of native and foreign woods, seeds, nuts, dry fruits; a collection of abnormal wood growths.

MINERAL AND GEOLOGICAL cabinets, including collections of Professor Mudge; a representative collection of the ores of Colorado, New Mexico and Arizona.

ZOÖLOGICAL MUSEUM, containing a typical collection of birds and mammals, mounted; a cabinet of bird skins, eggs and nests; a good collection of reptiles and fishes in alcohol; a large series of land, fresh-water and marine shells; a good representation of the insects of this locality, and a collection of invertebrates in alcohol.

MATHEMATICAL INSTRUMENTS,—compasses, transits, levels, chains, for field work.

CARPENTER SHOP, with separate benches and tools for thirty students in each class, besides lathes, mortising machine, and general chest of tools for fine work.

SHOP FOR IRON WORK, with forges, vises, drill, etc.

PRINTING OFFICE, with twenty-five pairs of cases, a good assortment of body and job type, a Country Babcock press, a quarto jobber, and a paper cutter.

TELEGRAPH OFFICE, with six miles of line, connecting thirty-two branch offices, and as many instruments, and a Remington typewriter.

SEWING ROOMS, with five machines, models and patterns.

KITCHEN LABORATORY, with ranges, cooking utensils, dining-room furnishings, creamery and dairy furniture.

MUSIC ROOMS, with four pianos, three organs, and other instruments.

A LIBRARY, carefully selected and catalogued, containing 6,000 volumes. A reading room is maintained in connection with the Library, where may be found on file forty-five of the leading literary, scientific, technical and agricultural periodicals, and several hundred newspapers, including the principal daily and county papers from all parts of the State.

ARMORY, containing one hundred stand of arms (breech-loading cadet rifles, calibre .45) with accoutrements.

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:—

In analytical chemistry, the students pay \$3 a term for the chemicals and apparatus used in their laboratory practice and analysis.

In the printing office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have the use of the office for the work performed during the industrial hours.

In telegraphy young men pay \$3 a term for office expenses.

Young women are furnished both printing and telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music, two a week, are from \$10 to \$14 per term, according to its length; one a week, \$6 to \$8.40. One half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

The cost of text-books at the book-store is, for the first year, about \$4 a term; for the second year, \$2.75; for the third year, \$7.50; and for the fourth year, \$5.50.

Board and washing are not furnished by the College. Board, with furnished room, can be procured in private families at from \$2.75 to \$4 per week. Some students board themselves at even less cost and rooms for the purpose can be obtained at a rent of from \$1 to \$2.50 a month. Washing costs from \$0.50 to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

EARNINGS.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed—outside of required hours of labor—upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates, varying with service rendered, from eight to ten cents an hour. The Superintendents strive to adjust their work to the necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay-roll for the past year ranges from \$377 to \$426.

Many students obtain work in the city or upon neighboring farms, and so pay a part of their expenses. Students employed in the shops are allowed to work somewhat for their own profit, in the manufacture of articles for sale and use. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term-time, or from other sources, for the larger part of their expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

GROUNDS AND BUILDINGS.

The farms, with the stock, orchards, gardens, vineyards, forestry and ornamental grounds, are used for experiment and illustration. All that is not strictly experimental is managed with a view to highest economy and profit.

On the larger of the farms, upon an elevation at the western limits of the city of Manhattan, and facing toward the city, are the College buildings. All are of the famed Manhattan limestone, and surrounded by pleasantly-arranged and planted grounds, as shown in the view opposite the title page, and upon the map accompanying the following description:—

College, 130 by 250 feet in extreme dimensions, arranged in three distinct structures, with connecting corridors. This building contains in its two stories and basement, offices, cloak-rooms, studies, chapel, library, reading room, model kitchen and dairy, sewing rooms, society rooms and ten class rooms.

Chemical Laboratory, one story, 36 by 99 and 46 by 75 feet of floor space, in form of a cross. It contains eight rooms, occupied by the Department of Chemistry, Physics and Mineralogy.

Mechanics' Hall, 39 by 103 feet, of two stories, occupied by the Carpenter shop and finishing room, Telegraph and Printing offices, and Music rooms.

Horticultural Hall, 32 by 80 feet, one story and cellar, having cabinet room, class room, work room and storage, with greenhouse attached.

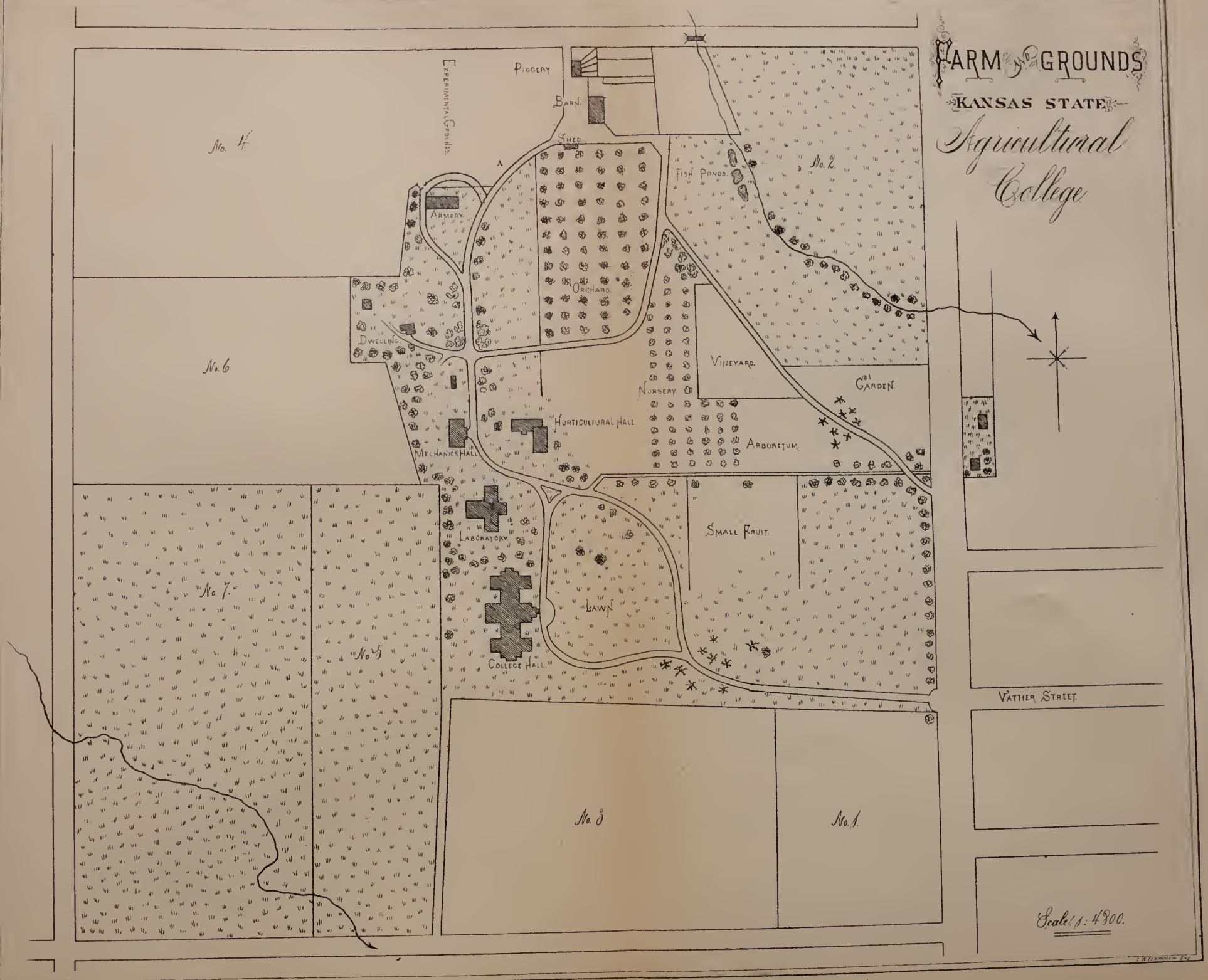
Two stone dwellings, occupied by the President and the Professor of Agriculture.

Armory Hall, 46 by 96 feet, and two stories. This building, which has served many purposes, is now to be fitted for armory and drill room below, and for class room, laboratory and museum of the Department of Natural History.

FARM GROUNDS

KANSAS STATE

Agricultural College



Scale: 1" = 400'

The barn is of stone, 48 by 96 feet, with side-hill basement stables, granary, tool-room, etc.

The blacksmith shop, piggery, implement shed, and various out-buildings, are of wood.

TERMS OF ADMISSION.

Applicants for admission at the beginning of the year, in September, must be at least fourteen years of age, and able to pass a satisfactory examination in reading, spelling, writing, arithmetic including percentage and interest, geography, and elements of English grammar. Those applying later in the term must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of the term, in order to advance with the class from the first.

Applicants of mature age who, for lack of advantages, are unable to pass the full examination may be received on special conditions.

Applicants for advanced standing in the course must pass examination in all the previous studies of the class to be entered; but, if they have pursued such studies in other institutions of similar rank, they may receive credit for their standing in those institutions upon presenting a certificate from the proper officer, showing that their course has been equivalent to that given here.

The following questions in arithmetic may serve as a sample of the usual examinations for admission:—

1. Define a number; a multiple; percentage.
2. A man bought 60 cows at \$75 each. He sold 25 of them at \$85 each. How must he sell the remainder to gain \$687½ on all?
3. Find the Greatest Common Divisor of 336, 384 and 432.
4. Find the sum of $8\frac{1}{2}$, $7\frac{2}{3}$, $6\frac{1}{4}$, $9\frac{3}{8}$.
5. Reduce £7 6s. 8d. to farthings, and explain the process.
6. Reduce 3 B. to the decimal part of a ton.
7. Sold a cow for \$37.50 and gained 20 per cent on the cost; what was the cost?
8. How many apple trees set in squares 30 feet apart can be planted in a field 40 rods square, the outer rows to be on the line of the field.
9. How much will it cost to carpet a floor 30x28 feet, with carpet 24 inches wide, at \$1.25 a yard?
10. Loaned \$1,200 August 1st, 1883; what was due September 10th, 1884, at 7 per cent per annum?

COLLEGE BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

College Lands and all business connected with their sale are in charge of the Land Agent.

Bills against the College should be presented monthly, and, when audited, are paid from the office of the Treasurer, in Manhattan.

All Payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The *Industrialist* may be addressed through Prof. E. M. Shelton, Managing Editor. Subscriptions are received by Supt. George F. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, chairman of committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding places, etc.,—may be obtained at the office of the President.

TERMS AND VACATIONS.

FALL TERM, 1885.

Wednesday, September 9th.—Examinations for admission at 9 A. M.

Thursday, September 10th.—College year begins.

Friday, October 16th and November 9th.—Monthly examinations.

Thursday, December 17th.—Annual Exhibition of the Alpha Beta Society.

Thursday and Friday, December 17th and 18th.—Examinations at close of Fall Term.

December 19th to January 4th.—Winter vacation.

WINTER TERM, 1886.

Monday, January 4th.—Examinations for admission at 9 A. M.

Tuesday, January 5th.—Winter Term begins.

Friday, February 12th.—Monthly examinations.

Thursday, March 25th.—Annual Exhibition of the Webster Society.

Thursday and Friday, March 25th and 26th.—Examinations at close of Winter Term.

SPRING TERM, 1886.

Monday, March 29th.—Spring Term begins.

Friday, April 30th.—Monthly examinations.

Monday and Tuesday, June 7th and 8th.—Examinations at close of year.

June 6th to 9th.—Exercises of Commencement Week.

Wednesday, June 9th, 10 A. M.—Commencement.

June 10th to September 8th.—Summer vacation.

FALL TERM, 1886.

Wednesday, September 8th.—Examinations for admission at 9 A. M.

Thursday, September 9th.—College year begins.

Board of Regents.

1863 to 1885.

1863	Hon. G. W. Collamore,	1863
1863	Hon. D. P. Lowe, Fort Scott,	1864
1863	Hon. A. Spaulding,	1864
1863	Hon. W. F. Woodworth,	1866
1863	Judge J. Pipher, Manhattan,	1868
1863	Judge L. D. Bailey, Lawrence,	1869
1863	Hon. S. D. Houston, Concordia,	1869
1863	Rev. J. G. Reaser,	1869
1863	Hon. T. H. Baker,	1870
1863	Rev. R. Cordley, Emporia,	1871
1863	Hon. Thomas Carney, Governor of State, <i>ex officio</i> ,	1865
1863	Hon. W. W. H. Lawrence, Secretary of State, <i>ex officio</i> ,	1865
1863	Hon. I. T. Goodnow, State Supt. of Public Instruction, <i>ex officio</i> ,	1867
1863	Rev. J. Denison, President of the College, <i>ex officio</i> ,	1873
1865	Rev. E. Gale, Manhattan,	1871
1865	Rev. D. Earhart,	1871
1865	Hon. S. J. Crawford, Governor of State, <i>ex officio</i> ,	1868
1865	Hon. R. A. Barker, Secretary of State, <i>ex officio</i> ,	1869
1867	Rev. P. McVicar, State Supt. of Public Instruction, <i>ex officio</i> ,	1871
1868	Hon. E. C. Manning, Winfield,	1870
1868	Rev. Chas. Reynolds, Fort Riley,	1874
1868	Hon. N. Green, Governor of State, <i>ex officio</i> ,	1869
1869	Hon. B. J. F. Hanna, Salina,	1873
1869	Hon. John McClenahan, Ottawa,	1873
1869	Hon. O. J. Grover, Savannah,	1873
1869	Hon. J. M. Harvey, Governor of State, <i>ex officio</i> ,	1873
1869	Hon. Thomas Moonlight, Secretary of State, <i>ex officio</i> ,	1871
1870	Rev. R. D. Parker, Manhattan,	1873
1870	Hon. H. J. Strickler, Tecumseh,	1873
1870	Hon. Alfred Gray, Quindaro,	1873
1870	Hon. Geo. W. Higinbotham, Manhattan,	1873
1871	Rev. L. Sternberg, Fort Harker,	1873
1871	Hon. Joshua Wheeler, Pardee,	1873
1871	Hon. Thos. A. Osborn, Governor of State, <i>ex officio</i> ,	1873
1871	Hon. W. H. Smallwood, Secretary of State, <i>ex officio</i> ,	1873
1871	Hon. H. D. McCarty, State Supt. of Public Instruction, <i>ex officio</i> ,	1873

1873	Hon. N. Green, Stockdale,	1874
1873	Hon. J. K. Hudson, Topeka,	1875
1873	Hon. Josiah Copley, Perryville,	1875
1873	Hon. James Rogers, Burlingame,	1876
1873	Hon. N. A. Adams, Manhattan,	1878
1873	Rev. Jno. A. Anderson, President of the College, <i>ex officio</i> ,	1879
1874	Hon. Charles E. Bates, Marysville,	1874
1874	Hon. J. H. Folks, Wellington,	1877
1874	Hon. B. L. Kingsbury, Burlington,	1879
1875	Hon. M. J. Salter, Thayer,	1877
1876	Hon. J. Lawrence, Beloit,	1878
1876	Hon. A. H. Horton, Atchison,	1877
1877	Hon. J. R. Hallowell, Columbus,	1879
1877	Hon. T. C. Henry, Abilene,	1880
1877	Hon. Stephen M. Wood, Elmdale,	1883
1878	Hon. L. J. Best, Beloit,	1878
1878	Hon. W. L. Challiss, Atchison,	1881
1879	Hon. E. B. Purcell, Manhattan,	1881
1879	Hon. D. C. McKay, Ames,	1883
1879	Hon. A. L. Redden, El Dorado,	1883
1879	Rev. Geo. T. Fairchild, President of the College, <i>ex officio</i> ,	
1880	Hon. A. J. Hoisington, Great Bend,	1883
1881	Hon. John Elliot, Manhattan,	1883
1881	Hon. V. V. Adamson, Holton,	1883
1883	Hon. F. D. Coburn, Wyandotte,	1885
1883	Hon. H. C. Kellerman, Burlington,	1885
1883	Rev. Philip Krohn, Atchison,	1885
1883	Hon. C. E. Gifford, Clay Center,	1885
1883	Hon. C. A. Leland, El Dorado,	
1883	Hon. J. T. Ellicott, Manhattan,	
1885	Hon. Thos. Henshall, Troy,	
1885	Hon. T. P. Moore, Holton,	
1885	Hon. A. B. Lemmon, Newton,	
1885	Hon. A. P. Forsyth, Liberty,	

SECRETARIES OF BOARD.

1863	Regent T. H. Baker,	1870
1870	Regent R. D. Parker,	1873
1873	Prof. E. Gale,	1873
1873	Wm. Burgoyne,	1874
1874	Regent N. A. Adams,	1878
1878	Pres. Jno. A. Anderson,	1879
1879	Regent T. C. Henry,	1879
1879	Pres. Geo. T. Fairchild,	
1884	I. D. Graham (assistant),	

TREASURERS OF BOARD.

1863	J. Pipher,	1870
1870	E. B. Purcell,	1882
1882	D. C. McKay,	1883
1883	J. T. Ellicott,	

LAND AGENTS.

1866	I. T. Goodnow,	1873
1873	L. R. Elliott,	1883
1883	J. B. Gifford,	

LOAN COMMISSIONERS.

1870	E. Gale,	1878
1878	M. L. Ward,	1883
1883	J. T. Ellicott,	

Faculty.

1863 to 1885.

PRESIDENTS.

1863	Joseph Denison,	1873
1873	John A. Anderson,	1879
1879	Geo. T. Fairchild,	

SECRETARIES.

1864	J. E. Platt,	1871
1871	Mrs. Lizzie J. Williams <i>Champney</i> ,	1873
1873	J. E. Platt,	1881
1881	I. D. Graham,	

PROFESSORS.

PRACTICAL AGRICULTURE.

1866	J. W. Hougham (Agricultural and Commercial Science), .	1872
1870	Fred E. Miller,	1874
1872	H. J. Detmers (Vete'ary Science and Animal Husbandry),	1874
1874	Edward M. Shelton,	

BOTANY AND HORTICULTURE.

1870	E. Gale (Horticulture),	1876
1876	E. Gale,	1878
1878	H. E. VanDeman,	1879
1879	Edwin A. Popenoe,	1883
1883	Edwin A. Popenoe (Horticulture and Entomology), . .	

NATURAL HISTORY,

1863	J. G. Schnebly (and Agricultural Chemistry),	1865
1865	B. F. Mudge (with Mathematics until 1870),	1874
1874	J. S. Whitman (Botany, Entomology and Geology), . .	1876
1883	W. A. Kellerman, (Botany and Zoölogy), :	

CHEMISTRY AND PHYSICS.

1874	Wm. K. Kedzie,	1878
1878	Geo. H. Failyer,	

MATHEMATICS.

1863	N. O. Preston (and English Literature),	1866
1866	J. E. Platt (and Vocal Music),	1873
1873	M. L. Ward (and English),	1883

1883	B. F. Nihart (Mechanics and Engineering).	
1883	D. E. Lantz,	

LANGUAGE AND LITERATURE.

1866	J. H. Lee (Ancient Classics),	1874
1874	J. H. Lee (English Language and History).	1875
1869	Miss Mary F. Hovey (German),	1872
1873	J. E. Platt (Elementary English and Mathematics).	1882

MILITARY SCIENCE AND TACTICS.

1866	Gen. J. H. Davidson,	1870
1881	Lieut. Albert Todd,	1884
1884	Lieut. W. J. Nicholson	

SERGEANT SIGNAL SERVICE.

1876	Harry F. McFarland,	1876
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SUPERINTENDENTS.

FARM.

1870	Fred E. Miller,	1874
1874	Edward M. Shelton,	

GARDENS, ORCHARDS, ETC.

1870	E. Gale,	1878
1878	H. E. VanDeman,	1879
1879	Edwin A. Popenoe,	

SHOPS.

1871	Ambrose Todd,	1878
1878	T. T. Hawkes,	1882
1882	M. A. Reeve (acting),	1883
1883	T. T. Hawkes,	

PRINTING.

1874	A. A. Stewart,	1881
1881	Geo. F. Thompson (acting),	1882
1882	Geo. F. Thompson,	

TELEGRAPHY.

1873	Frank C. Jackson,	1874
1874	Walter C. Stewart,	1879
1879	I. D. Graham,	

SEWING.

1874	Mrs. H. C. Cheseldine,	1875
1875	Mrs. M. E. Cripps,	1882
1882	Mrs. N. S. Kedzie,	1884
1884	Mrs. E. E. Winchip,	

INSTRUCTORS.

1872	Miss Jennie Detmers (Chemistry and German),	1873
1875	Mrs. M. L. Ward (French and German),	1876
1882	W. H. Cowles (English and History),	
1883	J. T. Willard (Assistant in Chemistry and Physics),	

DRAWING.

1870	Mrs. Lizzie J. Williams <i>Champney</i> ,	1876
1876	Mrs. Ella M. Kedzie,	1877
1877	John D. Walters,	

HOUSEHOLD ECONOMY.

1875	Mrs. M. E. Cripps,	1882
1882	Mrs. N. S. Kedzie,	

INSTRUMENTAL MUSIC.

1863	Mrs. Ella C. Beckwith,	1864
1864	C. Hubschman,	1866
1866	Mrs. Laura C. Lee,	1868
1868	Miss Emily M. Campbell,	1869
1869	Mrs. Hattie V. Werden,	1877
1877	Miss Carrie Steele,	1878
1878	Wm. L. Hofer,	

FOREMEN.

FARM.

1872	J. C. Mayos,	1875
1875	T. B. Morgan,	1882
1882	W. S. Myers,	1883
1883	E. Gregory,	1883
1883	W. Whitney,	

GARDENS, ORCHARDS, ETC.

1881	A. Winder,	1883
1883	G. E. Hopper,	
1883	W. Baxter (Greenhouse),	

BLACKSMITH SHOP.

1878	S. A. Hayes,	1879
1879	J. Linder (student, acting),	1883
1883	J. Lund (acting),	

LIBRARIANS.

1867	J. H. Lee,	1869
1869	J. S. Hougham	1871
1871	J. H. Lee,	1873
1873	J. S. Whitman,	1875

1875	M. L. Ward,	1882
1882	W. H. Cowles (acting),	

PREPARATORY DEPARTMENT.

1864	J. E. Platt (Principal),	1866
1864	Miss Belle M. Haines (Assistant),	1864

LECTURERS.

Dr. John A. Warder (Horticulture and Pomology), 1871.
 Joseph Rushman (Veterinary Science), 1871.
 Charles V. Riley (Economic Entomology), 1876.
 D. J. Brewer (Practical Law), 1875-1877.

Annual Addresses.

John J. Ingalls. Atchison. 1873.
 T. Dwight Thacher, Lawrence, 1874.
 Noble L. Prentis, Atchison, 1875.
 J. K. Hudson. Topeka, 1876.
 J. R. Hallowell, Columbus, 1878.
 S. O. Thacher, Lawrence, 1880.
 S. S. Benedict. Guilford. 1881.
 James Humphrey, Junction City, 1883.
 George R. Peck, Topeka. 1884.

Graduates.

1869.

Henry L. Denison, A. M., Denver, Colorado. Stenographer, and Clerk of U. S. Court.

Belle M. Haines *Pond*, A. M., Topeka, Kansas. Housewife.

Emma L. Haines *Bowen*, A. M., Zeandale, Kansas. Housewife.

John J. Points, A. M., Omaha, Nebraska. Teacher.

Martha A. White *Abbott*, A. M., Chicago, Illinois. Housewife.

1871.

Emily M. Campbell *Robinson*, A. B. Died in 1877.

Ella F. Denison *Wheeldon*, A. B., Lincoln, Nebraska. Housewife.

Luella M. Houston, A. B., Concordia, Kansas. Milliner and Dress-maker.

Charles O. Wheeldon, B. Sc., Lincoln, Nebraska. Lawyer, and member of Legislature.

Kate E. White *Turley*, A. B., Chicago, Illinois. Housewife.

1872.

Theophania M. Haines *Huntington*, A. B., Died in 1879.

Albert Todd, A. M., Fortress Monroe, Virginia. Lieutenant First U. S. Artillery.

S. Wendell Williston, A. M., M. D., New Haven, Connecticut. Assistant in Osteology in Peabody Museum.

1873.

Eliza Z. Davis *Stringfield*, A. B., Pomona, California. Housewife.

Sam Kimble, A. B., Manhattan, Kansas. Lawyer and Machinist.

1874.

Harry A. Brous, A. M., M. D., Philadelphia, Pennsylvania. Physician.

Edgar F. Clark, A. B., Ellsworth, Kansas. Lawyer.

John E. Davis, B. Sc., D. D. S., La Fayette, Indiana. Demonstrator of Operative Dentistry at Indiana Dental College, Indianapolis, Indiana.

William D. Gilbert, A. B., Atchison, Kansas. Lawyer, County Attorney.

A. Judson White, A. B., Leavenworth, Kansas. Minister.

1875.

Reuben E. Lofinck, B. Sc., Manhattan, Kansas. Stationer and Music dealer.

Alice E. Stewart *Points*, A. M., Omaha, Nebraska. Teacher.

1876.

George A. Gale, A. B., Lake Worth, Florida. Fruit-grower.

Ella M. Gale *Kedzie*, A. B., Olivet, Michigan. Art Teacher in Olivet College.

Nellie Sawyer *Kedzie*, M. Sc., Manhattan, Kansas. Teacher of Household Economy and Hygiene in Kansas State Agricultural College.

Carrie M. Kimball, A. B., Manhattan, Kansas. At home.

Minerva E. Whitman *Heiser*, A. B., Lyndon, Kansas. Housewife.

1877.

Ella S. Child, B. Sc., Manhattan, Kansas. Teacher.

George H. Failyer, M. Sc., Manhattan, Kansas. Professor of Chemistry in Kansas State Agricultural College.

John S. Griffing, M. Sc., Topeka, Kansas. Farmer and Teacher.

Walter C. Howard, B. Sc., Blackberry Station, Illinois. Minister.

Frederick O. Hoyt, B. Sc., Hiawatha, Kansas. Died in 1884.

Louis E. Humphrey, B. Sc., Milford, Kansas. Druggist.

James F. La Tourrette, B. Sc., Red River Springs, New Mexico. Stock-raiser.

Marion F. Leasure, B. Sc., La Cygne, Kansas. Lawyer.

William Ulrich, M. Sc., Manhattan, Kansas. Contractor and Builder.

1878.

Amos E. Wilson, B. Sc., McPherson, Kansas. Loan broker.

Geo. L. Platt, B. Sc. Died in 1878.

Charles S. McConnell, B. Sc., Manhattan, Kansas. Insurance Agent.

Albert N. Godfrey, M. Sc., Madison, Kansas. Farmer and Fruit-grower.

1879.

Arthur T. Blain, B. Sc., Duarte, California. Farmer.

Ettie Campbell *Blain*, B. Sc., Duarte, California. Housewife.

Wilmer K. Eckman, B. Sc., Downs, Kansas. Book-keeper.

Corvin J. Reed, B. Sc., St. Clere, Kansas. Merchant.

Harry C. Rushmore, B. Sc., Clyde, Kansas. Merchant.

William H. Sikes, Leonardville, Kansas. Merchant and Grain dealer.

Lewis A. Salter, B. Sc., Argonia, Kansas. Merchant.

Ella Vincent *McCormick*, B. Sc., Manhattan, Kansas. Housewife.

Clarence E. Wood, B. Sc., A. B., Ogden, Kansas. Teacher.

1880.

Augustine Beacham, B. Sc., Irving, Kansas. Student of Law.

Lizzie R. Cox, B. Sc., Manhattan, Kansas. Teacher.

Emma Hoyt *Turner*, B. Sc., St. Paul, Minnesota. Housewife.

Emma Knostman, B. Sc., Manhattan, Kansas. Teacher.

Grace Parker, B. Sc. Manhattan, Kansas. At home.

Noble A. Richardson, B. Sc., San Bernardino, California. Superintendent of City Schools.

Maria Sickels *Davis*, B. Sc., Ottawa, Kansas. Housewife.

1881.

Flora Donaldson *Reed*, B. Sc., St. Clere Kansas. Housewife.

Ulysses G. Houston, B. Sc., Manhattan, Kansas. Farmer.

Fletcher M. Jeffery, B. Sc., Wetmore, Kansas. Lawyer and Editor.

William J. Jeffery, B. Sc., Evanston, Illinois. Student of Theology.

Darwin S. Leach, B. Sc., Ann Arbor, Michigan. Student of Medicine.

William J. Lightfoot, B. Sc., Topeka, Kansas. Chief Surveying corps of A., T. & S. F. Railroad.

Dalinda Mason, B. Sc., Delphos, Kansas. Teacher.

Wirt S. Myers, B. Sc., Tampa, Florida. Farmer and Carpenter.

1882.

J. Chester Allen, B. Sc., Augusta, Georgia. Observer U. S. Signal Service.

Ida Carnford *Sloan*, B. Sc., Wakefield, Kansas. Housewife.

Edward V. Cripps, B. Sc., Valparaiso, Indiana. Student of Medicine.

Warren Knaus, B. Sc., Salina, Kansas. Lawyer and Entomologist.

Mattie E. Mails, B. Sc., Manhattan, Kansas. At home.

Allie S. Peckham, B. Sc., Topeka, Kansas. Art Teacher in Bethany College.

Belle Selby, B. Sc., Topeka, Kansas. Music Teacher.

Burton L. Short, B. Sc., Wyandotte, Kansas. Teacher.

John A. Sloan, B. Sc., Wakefield, Kansas. Farmer and Nurseryman.

1883.

James W. Berry, B. Sc., Jewell City, Kansas. Farmer, Contractor and Builder.

Mary C. Bower, B. Sc., Manhattan, Kansas. Clerk.

Lewis W. Call, B. Sc., St. Louis, Missouri. Observer U. S. Signal Service.

Emma Glossop, B. Sc., Manhattan, Kansas. Teacher.

William J. Griffing, B. Sc., Manhattan, Kansas. Farmer.

Phoebe E. Haines, B. Sc., Manhattan, Kansas. Teacher.

Hortense L. Houston, B. Sc., Concordia, Kansas. Milliner.

Jacob Lund, B. Sc., Manhattan, Kansas. Foreman Blacksmith Shop, Kansas State Agricultural College.

Katie I. Meguire, B. Sc., Los Angeles, California. Teacher.

J. Dana Needham, B. Sc., Lane, Kansas. Farmer.

Milan T. Ward, B. Sc., Orion, Illinois. Student of Medicine.

Julius T. Willard, B. Sc., Manhattan, Kansas. Assistant in Chemistry, Kansas State Agricultural College.

1884.

Emert S. Address, B. Sc., Lakin, Kansas. Farmer.

Florence J. Brous, B. Sc., Manhattan, Kansas. At home.

Bartholmew Buchli, B. Sc., Alma, Kansas. Student of Veterinary Science.

John H. Calvin, B. Sc., Topeka, Kansas. Student of Law.

Wm. A. Corey, B. Sc. Plowboy, Kansas. Farmer.

Henry M. Cottrell, B. Sc., Wabaunsee, Kansas. Farmer.

Carrie F. Donaldson, Manhattan, Kansas. Type-writer.

Florence A. Donaldson, B. Sc., Manhattan, Kansas. Teacher.

Frank W. Dunn, B. Sc., Manhattan, Kansas. Fruit-grower.

I. Day Gardiner, B. Sc., Eskridge, Kansas. Farmer.

Edwin H. Kern, B. Sc., Ionia, Kansas. Farmer.

Marion M. Lewis, B. Sc., Morgan Park, Illinois. Student of Theology.

Charles L. Marlatt, B. Sc., Manhattan, Kansas. Student Instructor in Kansas State Agricultural College.

Loncoln H. Neiswender, B. Sc., Silver Lake, Kansas. Farmer.

Geo. C. Peck, B. Sc., Topeka, Kansas. Printer.

Hattie L. Peck, B. Sc., Manhattan, Kansas. At home.

John W. Shartel, B. Sc., Topeka, Kansas. Student of Law.

SUMMARY.

During the twenty-two years of its existence, the College has received 2,585 different students,—1,744 young men and 841 young women. Most of these have come from farmers' homes, and, after from three months to three years of study, have gone back to such homes without graduation.

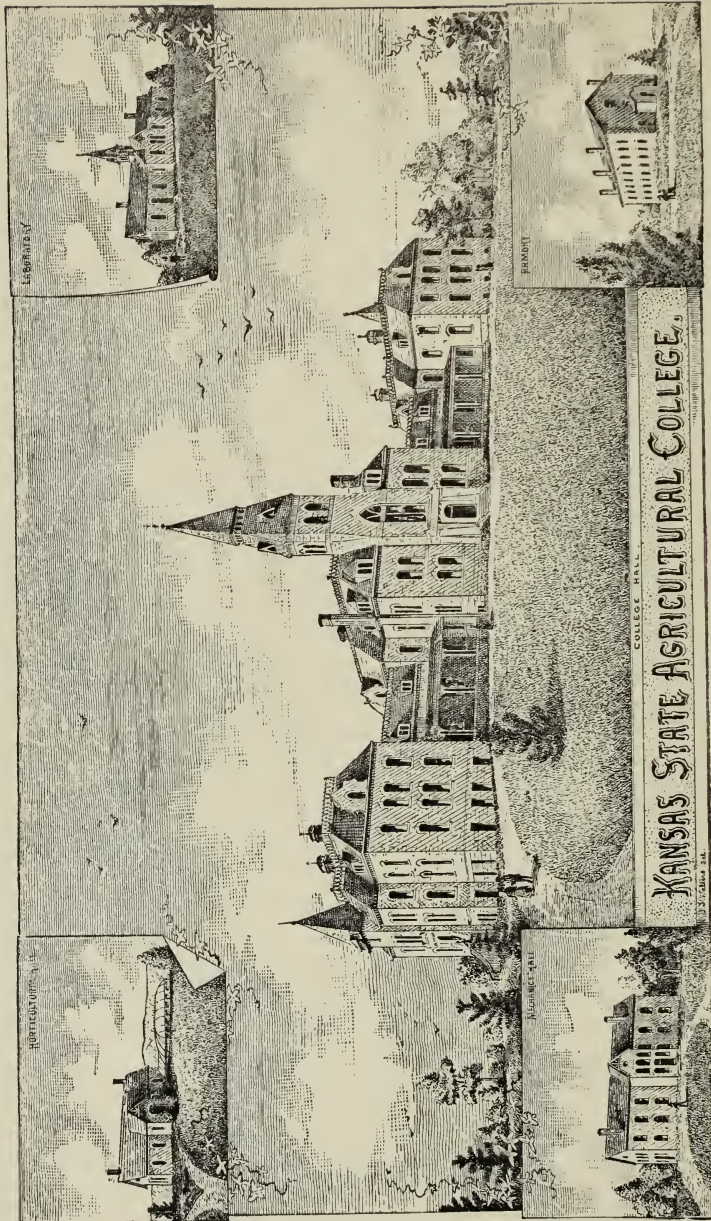
The number of graduates up to 1884 is 102,—of whom 37 are women. Graduates previous to 1877 pursued, with two exceptions, a classical course, and received the degree of Bachelor of Arts. Since 1877, all have received the degree of Bachelor of Science after a four-years course in the sciences with good English training.

The 65 young men are engaged in business as follows:—

Farmers	16
Fruit-growers	2
Mechanics	3
General Business men	10
Printer	1
Civil Engineer	1
Officer in Army	1
Observers in Signal Service	2
Teachers and Students of Special Sciences	6
Teachers in Public Schools	4
Doctors and Students of Medicine	4
Dentist	1
Ministers and Students of Theology	4
Lawyers and Students of Law	8
Deceased	2
Total	65

The 37 young women are occupied as follows:—

Housewives	13
Teachers	13
Milliners and Dressmakers	2
Clerks or Typewriters	2
At home	5
Deceased	2
Total	37



KANSAS STATE AGRICULTURAL COLLEGE.

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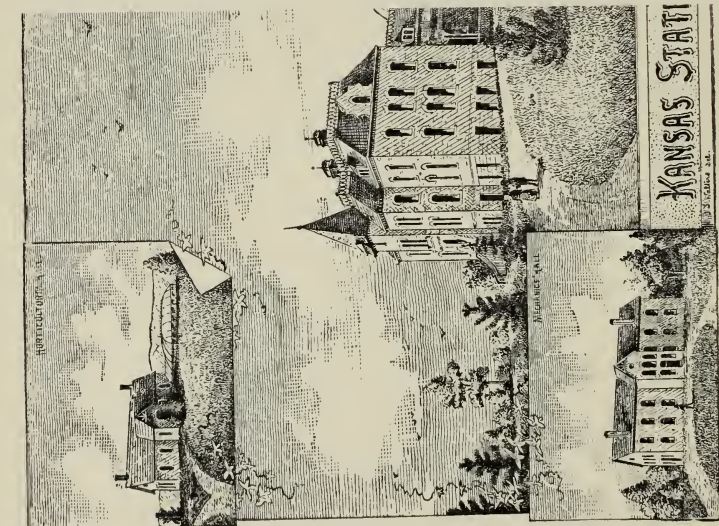
President GEO. T. FAIRCHILD.

OF

KANSAS.

1885-86.

MANHATTAN, KANSAS:
PRINTING DEPARTMENT, AGRICULTURAL COLLEGE.
1886.



TWENTY-THIRD

ANNUAL CATALOGUE

OF THE

OFFICERS AND STUDENTS

OF THE

State Agricultural College

OF

K A N S A S.

1885-86.

MANHATTAN, KANSAS:
PRINTING DEPARTMENT, AGRICULTURAL COLLEGE.
1886.

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HON. J. H. FULLINWIDER, El Dorado, Butler Co.

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I. D. GRAHAM, <i>Assistant Secretary,</i>	

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Professor of Logic and Political Economy.

EDWARD M. SHELTON, M. Sc.,
Professor of Agriculture, Superintendent of Farm.

GEORGE H. FAILYER, M. Sc.,
Professor of Chemistry and Mineralogy.

EDWIN A. POPENOE, A. M.,
*Professor of Horticulture and Entomology, Superintendent
of Orchards and Gardens.*

WILLIAM A. KELLERMAN, PH. D.,
Professor of Botany and Zoology.

DAVID E. LANTZ, M. Sc.,
Professor of Mathematics.

WILLIAM J. NICHOLSON, LIEUT. 7TH U. S. CAVALRY,
Professor of Military Science and Tactics.

JOHN D. WALTERS, M. Sc.,
Professor of Industrial Art and Designing.

BENJAMIN F. NIHART, A. M.,
Librarian, Instructor in Book-Keeping.

IRA D. GRAHAM, B. Sc.,
Secretary, Superintendent of Telegraphy.

ELIAS B. COWGILL, A. M.,
Instructor in Mechanics, Physics and Engineering.

OSCAR E. OLIN,
Instructor in English and History.

GEORGE F. THOMPSON,
Superintendent of Printing.

MRS. NELLIE S. KEDZIE, M. Sc.,
Instructor in Household Economy and Hygiene.

TIMOTHY T. HAWKES,
Superintendent of the Workshops.

MRS. ELIDA E. WINCHIP,
Superintendent of Sewing.

WILLIAM L. HOFER,
Professor of Music.

JULIUS T. WILLARD, B. Sc., *Assistant in Chemistry.*

FOREMEN.

WARREN WHITNEY, *Farm.*

GEORGE E. HOPPER, B. Sc., *Gardens.*

WILLIAM BAXTER, *Greenhouse.*

JACOB LUND, B. Sc., *Blacksmith Shop.*

STUDENT ASSISTANTS.

WILLIAM E. WHALEY, *English.*

GEORGE N. THOMPSON, *Carpentry.*

SEWARD N. PECK, *Carpentry.*

FRANK L. PARKER, *Telegraphy.*

Students.

RESIDENT GRADUATES.

Carrie F. Donaldson, Class of '84, *Library*.
Phæbe E. Haines, Class of '83, *Drawing*.
Charles L. Marlatt, Class of '84, *Entomology*.
Nellie J. Murphy, Class of '85, *Printing*.

FOURTH YEAR.

Edwin B. Bacheller,	*Lyons, Rice.
Lillie B. Bridgman,	Atchison, Atchison.
Louis P. Brous,	Manhattan, Riley.
Paul H. Fairchild,	Manhattan, Riley.
Abbott M. Green,	Oberlin, Decatur.
James G. Harbord,	Agnes City, Lyon.
John U. Higinbotham,	Manhattan, Riley.
Maria C. Hopper,	Downs, Osborne.
E. Ada Little,	Manhattan, Riley.
Orlando G. Palmer,	Jewell City, Jewell.
Frank L. Parker,	Hutchinson, Reno.
Edward H. Perry,	Manhattan, Riley.
H. Augustus Platt,	Manhattan, Riley.
Ada H. Quinby,	Wakefield, Clay.
Ida A. Quinby,	Wakefield, Clay.
Minnie Reed,	St. Clere, Pottawatomie.
David G. Robertson	Alton, Osborne.
Andrew A. Sebring,	Chalk Mound, Wabaunsee.
Edward O. Sisson,	Newcastle-on-Tyne, <i>England</i> .
John W. VanDeventer,	Mankato, Jewell.
George W. Waters,	Weston, Davis.
William E. Whaley,	Manhattan, Riley.
F. Henrietta Willard,	Topeka, Shawnee.
John L. Wise,	Greenville, <i>Illinois</i> .

* Postoffice and county. State in italics.

THIRD YEAR.

Valdy V. Akin,	Manhattan, Riley.
Fred H. Avery,	Wakefield, Clay.
Forney W. Baker,	Malta Bend, <i>Missouri</i> .
Claude M. Breese,	Elmdale, Chase.
John B. Brown,	Guilford, Wilson.
Walter J. Burtis,	Waterville, Marshall.
Mark A. Carleton,	Warren, Cloud.
Nellie E. Cottrell,	Wabaunsee, Wabaunsee.
Hattie S. Cragg,	Wabaunsee, Wabaunsee.
Judson H. Criswell,	Manhattan, Riley.
Fannie M. Dorman,	Wabaunsee, Wabaunsee.
Frederick B. Elliott,	Manhattan, Riley.
Katie G. Harbord,	Agnes City, Lyon.
Clara M. Keyes,	Manhattan, Riley.
Fred G. Kimball,	Manhattan, Riley.
Mary Kokanour,	Clay Center, Clay.
Peter M. Kokanour,	Clay Center, Clay.
Abbie L. Marlatt,	Manhattan, Riley.
Frederic A. Marlatt,	Manhattan, Riley.
James W. McDonald,	Manhattan, Riley.
William J. McLaughlin,	Centralia, Nemaha.
Milton H. Meyer,	Globe, Douglas.
Isaac R. Miller,	Clay Center, Clay.
Mary E. Moses,	Manhattan, Riley.
Charles A. Murphy,	Tabor, Clay.
Maria B. Noyes,	Wabaunsee, Wabaunsee.
Louis B. Parker,	Manhattan, Riley.
James E. Payne,	Edgerton, Johnson.
Seward N. Peck,	Junction City, Davis.
Elias L. Pound,	Manhattan, Riley.
Blanche W. Thompson,	Minneapolis, Ottawa.
George N. Thompson,	Belmond, <i>Iowa</i> .
Lucy VanZile,	Carthage, <i>Illinois</i> .
Theresa Wikander,	Randolph, Riley.
Willis M. Wright,	Manhattan, Riley.

SECOND YEAR.

Nettie M. Abell,	Leonardville, Riley.
John B. Anderson,	Manhattan, Riley.

Grant Arnold,	Clay Center, Clay.
Birdie N. Atwood,	Manhattan, Riley.
Alfred H. Ballard,	Shubert, <i>Nebraska</i> .
Fred Baxter,	Salina, Saline.
Lydia J. Bayles,	Manhattan, Riley.
Thomas A. Berry,	Jewell City, Jewell.
Benjamin M. Bovard,	Olesburg, Pottawatomie.
Lueppo D. Buenting,	Hanover, Washington.
Frederick C. Bulkley,	Scandia, Republic.
David E. Bundy,	Barclay, Osage.
Alexander C. Cobb,	Gibson Station, <i>Indian Territory</i> .
Mattie Cobb,	Gibson Station, <i>Indian Territory</i> .
Samuel S. Cobb,	Gibson Station, <i>Indian Territory</i> .
Edgar B. Colburn,	Manhattan, Riley.
G. Barstow Condit,	Ft. Huachuca, <i>Arizona</i> .
Louisa M. Cowell,	Wakefield, Clay.
Minnie H. Cowell,	Wakefield, Clay.
Phil S. Creager,	Jamestown, Cloud.
Rachel Davis,	Manhattan, Riley.
Frank B. Deibler,	Manhattan, Riley.
George H. Deibler,	Manhattan, Riley.
Oliver B. Detweiler,	Axtell, Marshall.
Huldah M. Dial,	Big Timber, Riley.
Mary A. Dial,	Big Timber, Riley.
Lyman H. Dixon,	Bent Canyon, <i>Colorado</i> .
Harvey A. Dunn,	Goshen, <i>Indiana</i> .
David G. Fairchild,	Manhattan, Riley.
Mattie I. Farley,	Melvorn, Osage.
Clarence E. Freeman,	North Topeka, Shawnee.
Carl E. Friend,	Holton, Jackson.
George A. Gamble,	Lansing, Leavenworth.
Nellie J. Gilbert,	Manhattan, Riley.
George Goff,	Walnut, Crawford.
Charles F. Goss,	Denison, <i>Missouri</i> .
Fred E. Goss,	Denison, <i>Missouri</i> .
Frankie Green,	Mendon, <i>Illinois</i> .
Lyman Harford,	Manhattan, Riley.
John Harrison,	Manhattan, Riley.
Charles L. Helmick,	Hico, <i>Arkansas</i> .
LaBlanche Houston,	Manhattan, Riley.
Louise M. Howe,	Fredonia, Wilson.
William S. Hoyt,	Manhattan, Riley.
Mac Hulett,	Edgerton, Johnson.
George V. Johnson,	Cedarvale, Cowley.
Humphrey W. Jones,	Manhattan, Riley.
George C. Keyes,	Manhattan, Riley.

Frank V. King,	Jewell City, Jewell.
Edward P. Kinney,	Manhattan, Riley.
Magdalene C. C. Krudop,	Waterville, Marshall.
Addie F. Lee,	Clay Center, Clay.
William C. Lee,	Manhattan, Riley.
Nathan E. Lewis,	Auburn, Shawnee.
Elijah A. Martin,	Wea, Miami.
Fred McCoy,	Hiawatha, Brown.
Mary E. McCullough,	Grand View, Morris.
Olive H. McCullough,	Grand View, Morris.
Barton W. McDonald,	Manhattan, Riley.
Jessie F. McDonald,	Manhattan, Riley.
Annie E. Mills,	Burlingame, Osage.
Archie W. Murray,	Agricola, Coffey.
Albert E. Newman,	Kingman, Kingman.
Ernest F. Nichols,	Leavenworth, Leavenworth.
Susan W. Nichols,	Stockdale, Riley.
Hattie M. Noyes,	Wabaunsee, Wabaunsee.
Carroll Owen,	North Topeka, Shawnee.
Eli M. Paddleford,	Stockdale, Riley.
Amory F. Persons,	Manhattan, Riley.
Edward L. Platt,	Manhattan, Riley.
Edwin S. Rinehart,	Novelty, <i>Missouri</i> .
Harry E. Robb,	Neal, Greenwood.
Emma Secrest,	Randolph, Riley.
Christian Seeland,	Manhattan, Riley.
Anna Snyder,	Oskaloosa, Jefferson.
Edwin H. Snyder,	Geuda, Sumner.
Stanley Snyder,	Oskaloosa, Jefferson.
Herman G. Spohr,	Manhattan, Riley.
Harry W. Stone,	Chicago, <i>Illinois</i> .
Marcus Terwilliger,	Lansing, Leavenworth.
Albert J. Thoes,	Alma, Wabaunsee.
George W. Thom,	Minneapolis, Ottawa.
Ina M. Turner,	Manhattan, Riley.
Oliver L. Utter,	Republic, Republic.
William VanZile,	Carthage, <i>Illinois</i> .
Aaron Walters,	Lura, Russell.
George H. Warner,	Stockdale, Riley.
Lora L. Waters,	Junction City, Davis.
Oscar A. White,	Stockdale, Riley.
Laura B. Willey,	Tehama, Cherokee.
Daniel W. Working, Jr.,	Logan, Phillips.

FIRST YEAR.

Edward J. Abell,	Leonardville, Riley.
Robert C. Abell,	Leonardville, Riley.
Harry W. Aiman,	New Chillicothe, Dickinson.
Emma A. Allen,	Manhattan, Riley.
Dudley Atkins,	Las Vegas, <i>New Mexico</i> .
George E. Avery,	Milford, Davis.
Herman W. Avery,	Wakefield, Clay.
Mary W. Avery,	Wakefield, Clay.
James F. Axley,	Belknap, <i>Illinois</i> .
Charles L. Babcock,	White Rock, Republic.
Charles H. Baker,	Shoals, <i>Indiana</i> .
Henry M. Baker,	Glasco, Cloud.
William E. Baldwin,	Ada, Ottawa.
Maggie D. Ball,	Colorado, Lincoln.
Herman E. Bammes,	Manhattan, Riley.
George E. Barnes,	Independence, Montgomery.
James C. Barnes,	Lebanon, Smith.
Joseph W. Bayles,	Manhattan, Riley.
Ruth R. Bayles,	Manhattan, Riley.
Charles M. Beck,	Fort Scott, Bourbon.
Frederick W. Benteen,	Fort McKinney, <i>Wyoming</i> .
Carrie E. Bisbey,	Wamego, Pottawatomie.
Frank R. Blackshere,	Elmdale, Chase.
Marian Blachly,	Leonardville, Riley.
Elizabeth Blyth,	Wild Cat, Riley.
Beda D. Bohgren,	Manhattan, Riley.
Alice E. Brown,	Carbondale, Osage.
Frank Brown,	Carbondale, Osage.
Mary J. W. Brown,	Guilford, Wilson.
Walter R. Browning,	Hamlin, Brown.
George Buchanan,	Robinson, Brown.
Edward M. Burgoyne,	Manhattan, Riley.
Lewis J. Burkhalter,	Robinson, Brown.
Harvey T. Burtis,	Waterville, Marshall.
Ruth E. Burton,	Bellmore, <i>Indiana</i> .
Carrie M. Cady,	Mound City, Linn.
Eva G. Cady,	Cadmus Linn.
Ray A. Cady,	Cadmus, Linn.
George W. Call,	Manhattan, Riley.
Frank Callender,	Anthony, Harper.
Roderick Cameron,	Clayton, Decatur.
Charles D. Campbell,	Hiawatha, Brown.
Frank A. Campbell,	Wall Street, Linn.

John Campbell,	Salem, Jewell.
George W. Carson,	Clay Center, Clay.
Anna G. Casebeer,	Nilesville, Ottawa.
William Castone,	Leadville, <i>Colorado</i> .
Fannie Chambers,	Milford, Davis.
Allen P. Chaplin,	Geuda, Sumner.
Arthur F. Chase,	Manhattan, Riley.
George C. Cochrane,	Humboldt, Allen.
Clara A. Coffey,	Manhattan, Riley.
John W. Corkill,	Dover, Shawnee.
Mary E. Cottrell,	Wabaunsee, Wabaunsee.
Sarah P. Cowgill,	Manhattan, Riley.
Lucius E. S. Cowles,	Adrian, Jackson.
Cyrus S. Criswell,	Manhattan, Riley.
Ada E. Currie,	Olesburg, Pottawatomie.
Samuel W. Currie,	Olesburg, Pottawatomie.
Omer A. Dametz,	Washington, Washington.
Harry C. Daniels,	White Rock, Republic.
Charles Davidson,	Agricola, Coffey.
David Davis,	Manhattan, Riley.
Moses P. Davis,	Guilford, Wilson.
Thomas C. Davis,	Stafford, Stafford.
Lillie E. Deen,	Mifflintown, <i>Pennsylvania</i> .
Oscar Dewey,	Mound City, Linn.
Frank Dinsmore,	Cleveland, <i>Ohio</i> .
Frank S. Ditto,	Altoona, Wilson.
Maggie B. Dixon,	Vinton, Riley.
John P. Dixon,	Junction City, Davis.
Eunice M. Donaldson,	Manhattan, Riley.
Lincoln L. Elliott,	Sterling, Rice.
Sylvester J. Elliott,	Sterling, Rice.
Solomon L. Ellis,	Springfield, <i>Iowa</i> .
Fannie M. Eustis,	Adrian, Jackson.
Daniel D. Evans,	Bethel, <i>Kentucky</i> .
Augusta Ewalt,	Manhattan, Riley.
William H. Fay,	Portis, Osborne.
Lizzie Fortner,	Wabaunsee, Wabaunsee.
Nannie R. Foy,	Wabaunsee, Wabaunsee.
Robert B. Forsyth,	Liberty, Montgomery.
Gabriel Frank,	Alma, Wabaunsee.
Edward L. Gamble,	Seapo, Republic.
Grant Gates,	Gatesville, Clay.
George R. Gill,	Atchison, Atchison.
Nina F. Gist,	Manhattan, Riley.
Edward E. Goff,	Wabaunsee, Wabaunsee.
John S. Gould,	Wabaunsee, Wabaunsee.

Henry F. Gourley,	Burr Oak, Jewell.
John Grant,	Ellinwood, Barton.
Albert H. Greeley,	Fresno City, <i>California</i> .
Herbert D. Hall,	Farmington, Atchison.
General Hamilton,	Manhattan, Riley.
Jost Hammerli, Jr.,	Oak Hill, Clay.
David M. Hanna,	Howard, Elk.
Lockhart Harman,	Valley Falls, Jefferson.
Mary F. Harman,	Valley Falls, Jefferson.
Alexander C. Hart,	Coffeyville, Montgomery.
John S. Hazen,	Granada, Nemaha.
Louis Hensel,	Halifax, Wabaunsee.
George H. Hepler,	Manhattan, Riley.
Luman J. Heusted,	Clay Center, Clay.
Dallas W. Heywood,	Manhattan, Riley.
Katie Hibner,	Leonardville, Riley.
James R. Hillhouse,	Glasco, Cloud.
Lucy Himes,	Manhattan, Riley.
Emma A. Hoar,	Manhattan, Riley.
Mollie Holcomb,	Winfield, Cowley.
George H. Holdeman,	Florid, <i>Illinois</i> .
Charles A. Holler,	Newark, <i>Ohio</i> .
Alice C. Hood,	Manhattan, Riley.
Mary J. Hood,	Manhattan, Riley.
Walter W. Hook,	Burr Oak, Jewell.
Jesse L. Housekeeper,	Manhattan, Riley.
William J. Houston,	Rooks Center, Rooks.
Edward D. Howard,	Belleville, Republic.
Malcolm U. Hughes,	Rossville, Shawnee.
John S. Hume,	Osawatomie, Miami.
Carrie K. Hunter,	Manhattan, Riley.
James P. Jack,	New Bethlehem, <i>Pennsylvania</i> .
Jesse A. Jeffries,	Hiawatha, Brown.
Benjamin F. Kelley,	Robinson, Brown.
Grant Kelsey,	Topeka, Shawnee.
Jennie C. Kerr,	Wakefield, Clay.
Alfred D. Kersey,	Louisville, Pottawatomie.
Albert B. Kimball,	Manhattan, Riley.
Bertha S. Kimball,	Manhattan, Riley.
Elmer D. King,	Shubert, <i>Nebraska</i> .
Frank F. Kinney,	Manhattan, Riley.
Harry A. Kinney,	Manhattan, Riley.
John Kleinbans,	Grantville, Jefferson.
William Knabb,	Robinson, Brown.
Emma M. Knipe,	Manhattan, Riley.
Harriet E. Knipe,	Manhattan, Riley.

Eva M. Knostman,	Manhattan, Riley.
Sadie Kokanour,	Clay Center, Clay.
Susie Kokanour,	Clay Center, Clay.
John F. Kurr,	Solomon City, Dickinson.
Lottie A. Lamb,	Irving, Marshall.
Jesse R. Lasswell,	Adrian, Jackson.
Mary C. Lee,	Manhattan, Riley.
Thomas H. Lee,	Chepstow, Washington.
Frank Lenk,	Alma, Wabaunsee.
Nellie P. Little,	Manhattan, Riley.
James MacMaster,	Ellsworth, Ellsworth.
Samuel A. Mann,	Hiawatha, Brown.
Mary A. Marlatt,	Manhattan, Riley.
Mary E. Marshall,	Manhattan, Riley.
Elsie Thomas Martin,	Wea, Miami.
Ida Martindale,	Manhattan, Riley.
William F. Mauck,	Hartford, Lyon.
Charles H. McAlister,	Bethel, <i>Kentucky</i> .
Katie J. McCartney,	Hiawatha, Brown.
William H. McCartney,	Hiawatha, Brown.
George W. McCoy,	Wilson, Ellsworth.
Willis L. McCulley,	Alton, Osborne.
John J. McCullough,	Grand View, Morris.
Elizabeth McIlwain,	Manhattan, Riley.
Mollie McIlwain,	Manhattan, Riley.
Gustave H. Meier,	Bismarck, Wabaunsee.
Henry O. Miller,	Topeka, Shawnee.
James A. Miller,	Seapo, Republic.
Alonzo A. Mills,	Hoytsville, <i>Utah</i> .
Alexander C. Mitchell,	Wabaunsee, Wabaunsee.
George A. Mitchell,	Seneca, Nemaha.
Arthur E. Mize,	Atchison, Atchison.
Frank C. Morey,	Scandia, Republic.
Wilton L. Morse,	Mound City, Linn.
Ina Musselman,	Minneapolis, Ottawa.
Harmon H. Myers,	Colusa, <i>Illinois</i> .
Lucien G. Myers,	Morrill, Brown.
George W. Norris,	Ellinwood, Barton.
Walter B. Norris,	Ellinwood, Barton.
Richard Oakford,	Fredonia, Wilson.
Charles O'Harro,	Clay Center, Clay.
William F. O'Harro,	Clay Center, Clay.
Walter H. Olin,	Potwin, Butler.
Anton Olson,	Glasco, Cloud.
John F. Overfield,	Independence, Montgomery.
James Owers,	Belmont, Woodson.

Victor A. Pairan,	White Rock, Republic.
Ernest C. Parker,	Manhattan, Riley.
Wesley C. Parker,	Sabetha, Nemaha.
Joseph Parr,	Topeka, Shawnee.
Eva Patrick,	Leonardville, Riley.
Andrew W. Patterson,	Granby, <i>Missouri</i> .
Emily Payne,	Wamego, Pottawatomie.
Rhoda F. Peake,	Belvue, Pottawatomie.
Richard H. Peake,	Belvue, Pottawatomie.
John H. Pearce,	Edgerton, Johnson.
Edwin S. Peckham,	Manhattan, Riley.
Elizabeth W. Perry,	Manhattan, Riley.
Edwin Persson,	Mariadahl, Pottawatomie.
Charles H. Peterson,	Ravenswood, <i>Illinois</i> .
Daniel Pfeiffer,	Hamlin, Brown.
William H. Phipps,	Chapman, Dickinson.
Lee O. Piper,	Lansing, Leavenworth.
James W. Randall,	Lebo, Coffey.
Stephen B. Reed,	Guilford, Wilson.
Mary A. Rees,	Minneapolis, Ottawa.
Millard M. Reeves,	Ruby, <i>Nebraska</i> .
Ruth A. Rhodes,	Smith Center, Smith.
Homer N. Rice,	Atchison, Atchison.
H. Elsie Richardson,	Wakefield, Clay.
William B. Robbins,	Sorghum, Rice.
Albert G. Rogers,	Burrton, Harvey.
Agnes V. Romick,	Nilesville, Ottawa.
William F. Rudy,	Manhattan, Riley.
James L. Rush,	Kingman, Kingman.
Frank J. Scott,	Oakwood, Linn.
Libbie Scott,	Centerville, Linn.
Jesse S. Searl,	Solomon City, Dickinson.
May Secrest,	Randolph, Riley.
Oliver S. Sellers,	McPherson, McPherson.
Emma Shaw,	Portis, Osborne.
Fred Shaw,	Portis, Osborne.
Frederic C. Shonyo,	Sorghum, Rice.
Alice Shultice,	Verdi, Ottawa.
Louis H. Simmons,	Wellington, Sumner.
Mary B. Smith,	Atchison, Atchison.
Percival W. Smith,	Twin Mound, Douglas.
William C. Snow,	Manhattan, Riley.
Albert J. Snyder,	Atchison, Atchison.
Ralph Snyder,	Oskaloosa, Jefferson.
Louis A. Spencer,	Sabetha, Nemaha.
Emma E. Spohr,	Manhattan, Riley.

Fred H. Stacy,	Osborn, <i>Missouri</i> .
Edwin H. Stayt,	WaKeeney, Trego.
Edmund B. Stoltz,	Solomon City, Dickinson.
Thomas Stone,	Idana, Clay.
Evangeline H. Strong,	Manhattan, Riley.
Richey Summerville,	Galva, McPherson.
Walter T. Swingle,	Manhattan, Riley.
James E. Thackrey,	Manhattan, Riley.
Samuel I. Thackrey,	Manhattan, Riley.
William E. Thackrey	Manhattan, Riley.
William L. Thickstun,	Metuchen, <i>New Jersey</i> .
Charles H. Thompson,	Osborn, <i>Missouri</i> .
Charles W. Thompson,	Edwardsville, Wyandotte.
Frederick A. Thompson,	Belmond, <i>Iowa</i> .
James Trant,	Edwardsville, Wyandotte.
Lena L. Tucker,	Clinton, Douglas.
Jennie C. Tunnell,	Manhattan, Riley.
Calvin K. Turner,	Rock Creek, Jefferson.
George L. Turner,	Manhattan, Riley.
Peter L. Ulam,	Douglass, Butler.
Mollie E. Ulrich,	Manhattan, Riley.
George A. VanNess,	Fort Reno, <i>Indian Territory</i> .
Dora VanZile,	Carthage, <i>Illinois</i> .
Peter I. Venard,	Hollis, Cloud.
John C. Vogler,	Downs, Osborne.
Robert U. Waldraven,	Parallel, Washington.
William R. Wallace,	Junction City, Davis.
Warder E. Wallingford,	Eden, Atchison.
George L. Weaver,	Manhattan, Riley.
Olive W. Webb,	Manhattan, Riley.
J. Winifred Westgate,	Manhattan, Riley.
Rodney D. Whaley,	Manhattan, Riley.
Frank L. Whims,	Westmoreland, Pottawatomie.
Frank V. White,	Osborn, <i>Missouri</i> .
Jessie Whitford,	Manhattan, Riley.
Lou E. Whitaker,	Pardee, Atchison.
Charles Wickizer,	Kansas City, <i>Missouri</i> .
Frank Wickizer,	Kansas City, <i>Missouri</i> .
Mate Wickizer,	Manhattan, Riley.
Henry S. Willard,	Wabaunsee, Wabaunsee.
Mabel A. Willey,	Tehama, Cherokee.
George Winslow,	Padonia, Brown.
Perry E. Wolfley,	Edgerton, Johnson.
Zealous E. Wright,	Kenneth, Sheridan.
William R. Wyatt,	Cedar Point, Chase.
Joseph W. Yeoman,	Kellogg, Cowley.

SPECIAL COURSE.

Allen Lee, London, *England*.

NUMBER OF STUDENTS.

Classes:—	<i>Gentlemen.</i>	<i>Ladies.</i>	<i>Total.</i>
Resident Graduates,	1	3	4
Fourth Year,	17	7	24
Third Year,	23	12	35
Second Year,	64	27	91
First Year,	195	78	273
Special Course,	1		1
	<hr/>	<hr/>	<hr/>
Total,	301	127	428
From 60 counties of Kansas,			378
From 18 other States,			50
			<hr/>
Total			428

TERMS AND VACATIONS.

FALL TERM, 1886.

Wednesday, September 8th.—Examinations for admission at 9 A. M.

Thursday, September 9th.—College year begins.

Friday, October 15th and November 12th.—Monthly Examinations.

Thursday, December 16th.—Annual Exhibition of the Alpha Beta Society.

Thursday and Friday, December 16th and 17th.—Examinations at close of Fall Term

December 18th to January 3d.—Winter vacation.

WINTER TERM, 1887.

Monday, January 3d —Examination for admission at 9 A. M.

Tuesday, January 4th.—Winter Term begins.

Friday, February 11th.—Monthly Examinations.

Thursday, March 24th.—Annual Exhibition of the Webster Society.

Thursday and Friday, March 24th and 25th.—Examinations at close of Winter Term.

SPRING TERM, 1887.

Monday, March 28th.—Spring Term begins.

Friday, April 29th.—Monthly Examinations.

Monday and Tuesday, June 6th and 7th.—Examinations at close of year.

June 5th to 8th.—Exercises of Commencement Week.

Wednesday, June 8th, 10 A. M.—Commencement.

June 9th to September 7th.—Summer Vacation.

FALL TERM, 1887.

Wednesday, September 7th.—Examinations for admission at 9 A. M.

Thursday, September 8th.—College year begins.

Objects and Methods.

ENDOWMENT.

An act of Congress, approved July 2d, 1862, gave to each State public lands to the amount of 30,000 acres for each of the Senators and Representatives in Congress according to the census of 1860, for the "endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, * * * in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

Under this act the State of Kansas received 82,313.53 acres of land, and, in 1863, established the State Agricultural College, by endowing with these lands Bluemont College, which had been erected two miles from Manhattan under the auspices of the M. E. Church, but was presented to the State for the purpose named in the act of Congress. Of these lands, all but 160 acres have now been sold, giving a fund of \$499,363.98, which is by law invested in bonds, the interest alone being used for current expenses of the College.

In 1873 the College was reorganized upon a thoroughly industrial basis, with prominence given to practical agriculture and related sciences; and in 1875, the furniture and apparatus of the College were moved to the farm of 215 acres, one mile from the city of Manhattan. On this fine location, the State has erected buildings valued at \$110,000, of which a description is given elsewhere. The farm and grounds, furniture, stock and other illustrative apparatus are valued at over \$90,000.

The annual income from the endowment fund, about \$35,000, meets all the expenses of instruction: the State provides, as the law requires, the necessary buildings and expenses in management of funds.

OBJECTS.

This College now accomplishes the objects of its endowment in several ways.

First, it gives a substantial education to men and women. Such general information and discipline of mind and character as help to make intelligent and useful citizens are offered in all its departments, while the students are kept in sympathy with the callings of the people.

Second, it teaches the sciences applied to the various industries of farm, shops and home. Chemistry, botany, entomology, zoölogy and mechanics are made prominent means of education to quick observation and accurate judgment. Careful study of the minerals, plants and animals themselves illustrates and fixes the daily lessons. At the same time, lessons in agriculture, horticulture and household economy show the application of science; and all are enforced by actual experiment.

Third, it trains in the elements of the arts themselves, and imparts such skill as to make the hands ready instruments of thoughtful brains. The drill of the shops, gardens, farm and household departments is made a part of a general education to usefulness, and insures a means of living to all who make good use of it. At the same time, it preserves habits of industry and manual exertion, and cultivates a taste for rural and domestic pursuits.

Fourth, it strives to increase our experimental knowledge of agriculture and horticulture. So far as means and circumstances permit, experiments are undertaken with a view to more definite results than ordinary experience can give. By this method the students themselves are trained to more accurate observation and judgment in these practical tests of principles in farming.

Fifth, it seeks to disseminate such practical truths as have stood the test of scientific inquiry. For this purpose it publishes the weekly *Industrialist*, and issues special reports as occasion requires. Its officers also share in debates and consultations of farmers and horticulturists throughout the State. Each winter a series of six Farmers' Institutes is held in as many different counties of the State. In these the Faculty share with the people in lectures, essays and discussions upon topics of most interest to farmers. These Institutes have brought the College into more direct sympathy with the people and their work, so as to make possible a more general dissemination of the truths presented; and permanent organizations for the same purpose in many counties are increasing. Correspondence upon such questions is invited by all members of the Faculty, and applications for Institutes are desired from all parts of the State.

COURSE OF STUDY.

The necessity for so adjusting various branches of a course of study that there shall be as little waste as possible in acquiring both information and discipline is felt by every teacher. Such a course is not designed to be absolutely inflexible, but to guide the judgment into some definite line of progress from which no mere whim shall turn a student aside.

Each student is expected to take three studies besides one hour's practice in an industrial art; and variations from this rule can be made only with the consent of the Faculty.

Parallel courses are offered to both sexes, with such differences as their necessities seem to call for. The following gives the general scope of the two; but fuller explanations are found under OUTLINE OF INSTRUCTION:—

FIRST YEAR.

FALL TERM.—Arithmetic.

English Analysis.

Geometrical Drawing.

Industrial.

WINTER TERM.—Book-Keeping.

English Structure.

United States History.

Freehand Drawing three hours a week.

Industrial.

SPRING TERM.—Algebra.

English Composition.

Botany.

Industrial. (Carpentry or Sewing.)

SECOND YEAR.

FALL TERM.—Algebra completed.

Elementary Chemistry.

Horticulture.

Fourteen lectures in Military Science.

Industrial.

WINTER TERM.—Geometry.

Agriculture or Household Economy.

Organic Chemistry and Mineralogy.

Twelve lessons in Military Science.

Industrial. (Cooking.)

SPRING TERM.—Geometry completed, Mechanical Drawing.

Entomology.

Analytical Chemistry.

Industrial. (Farm and Garden or Dairy.)

THIRD YEAR.

FALL TERM.—Trigonometry and Surveying.
Anatomy and Physiology.
General History.

Industrial. (Farm and Garden.)

WINTER TERM.—Mechanics.
Agricultural Chemistry.
Rhetoric.
Industrial.

SPRING TERM.—Civil Engineering or Hygiene.
Physics.
English Literature.
Mechanical Drawing two hours a week.
Industrial.

FOURTH YEAR.

FALL TERM.—Agriculture or Literature.
Physics and Meteorology.
Psychology.
Industrial.

WINTER TERM.—Logic, Deductive and Inductive.
Zoölogy.
Structural Botany.
Industrial.

SPRING TERM.—Geology.
United States Constitution.
Political Economy.
Industrial.

Industrial Training.—Closely adjusted to the course of study, industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training, each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have Farming, Gardening and Fruit-growing, Carpentry, Cabin making, Iron work, Printing or Telegraphy. Young women may take Sewing, Printing, Telegraphy, Floriculture or Music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and, during the spring term of the second year and the fall term of the third year, upon the farm, gardens and orchards. Young women take their industrial one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

Military Drill is optional in any term.

CLASS HOURS, 1886-87.

Hrs.	FIRST YEAR.		SECOND YEAR.		THIRD YEAR.	FOURTH YEAR.
I.	Arithmetic.	English.	Industrials.	Horticulture.	Algebra.	General History.
II.		Industrials.	Drawing.	Algebra.	Horticulture.	Physiology.
III.	Drawing.	Arithmetic.	English.	Industrials.	Chemistry.	Industrials.
IV.	English.	Drawing.	Arithmetic.	Chemistry.	Industrials.	Psychology.
V.	Industrials.			Chem. practice. Military Science.	Chem. Practice. Military Science.	Trigonometry and Surveying. Surveying Practice.
I.	Book-keeping.	Industrials.	U. S. History.	Household Economy.	Agriculture.	Mechanics.
II.	U. S. History.	Book-keeping.	Industrials.	Chemistry 6 w'ks. Mineralogy.	Geometry.	Rhetoric.
III.	English Structure.	Drawing 3 times a week.	Book-keeping.	Blowpipe Analy's	Chemistry 6 w'ks. Mineralogy.	Industrials.
IV.	Industrials.	English Structure.	Drawing 3 times a week.	Geometry.	Blowpipe Analy's	Agricultural Chemistry.
V.	Drawing 3 times a week.	U. S. History.	English Structure.	Industrials.	Military Science.	Industrials.
I.	Industrials.	Composition.	Botany.	Drawing 5 weeks. Geometry.	Entomology.	Hygiene.
II.	Botany.	Algebra.		Entomology.	Geometry 5 wk's. Drawing.	Physic's.
III.		Botany.	Algebra.	Analytical Chemistry.	Analytical Chemistry.	English Literature.
IV.	Algebra.	Industrials.	Composition.		Civil Engineering.	Political Economy.
V.	Composition.		Industrials.		Dairying.	Geology.

WINTER TERM,
Twelve weeks.

FALL TERM,
Fourteen weeks.

SPRING TERM,
Eleven weeks.

Military drill twice a week.

Special Courses.—Persons of suitable age or advancement who desire to pursue such branches of study as are most directly related to agriculture or other industries, may select such studies, under the advice of the Faculty. Assaying and Pharmaceutical Chemistry may be provided for by special arrangement, when students are qualified to pursue them.

Post-Graduate Courses.—Arrangements can be made for advanced study in the several departments at any time. Special opportunities for investigation and research will be afforded at all times to resident graduates in Agriculture and Agricultural Chemistry, Physics and Chemistry, Horticulture and Botany, Zoölogy and Entomology, Mathematics, Engineering and Drafting. Every facility for advancement in the several arts taught at the College will be given such students, though they are not required to pursue industrial training while in such courses.

Degrees.—The degree of Bachelor of Science is conferred upon students who complete the full course of four years and sustain all the examinations.

The degree of Master of Science is conferred in course upon graduates who comply with the following conditions:—

1. Each candidate shall furnish evidence satisfactory to the Faculty of proficiency in at least one of each of the groups of arts and sciences here named:—

Arts:—

Agriculture.
Horticulture.
Engineering.
Architecture and Designing.
Domestic Economy.

Sciences:—

Botany.
Chemistry.
Zoölogy.
Entomology.
Physics.

2. Each candidate shall present for consideration by the Faculty a satisfactory thesis, involving original researches in line with one or the other of the courses pursued as above, and shall deposit a perfect copy in the College Library.

3. Application to the Faculty for sanction of the lines of study and research selected should be made as early as the first day of November, and the subject of the thesis must be settled upon as soon as the first day of January preceding the Commencement at which the degree is expected.

4. Candidates must be from graduates of three or more years' standing, unless a post-graduate course of one year or more has been pursued at this College, in which case the second degree may be conferred two years after graduation.

Outlines of direction for study and research in various arts and sciences, with special adaptation to the wants and opportunities of individual applicants, will be furnished, at request, to all graduates; and Professors in charge will gladly aid by correspondence in any researches undertaken.

OUTLINE OF INSTRUCTION.

Agriculture.—*Second Year.*—History of agriculture, showing the successive steps by which the art has attained its present position. History and characteristics of breeds; their adaptation to the varying conditions of soil, climate and situation; study of the forms of animals, as shown by the different breeds belonging to the College; the relation of stock-raising to general farming. Cultivation of hoed crops; management of corn and roots with reference to stock-feeding and the growth of the finer grains. The growth of the “tame grasses” in Kansas; the best sorts for the State, and their management, as shown by experience on the College Farm and elsewhere. Implements of simple tillage; mechanical principles involved in their construction. Application of labor. Draught; different adjustments, as affecting draught; use of the dynamometer. Plows for soil and subsoil. Drainage; soils that need draining; how to lay out a system of drains.

Fourth Year.—General principles governing the development of domestic animals. The laws of hereditary disease,—of normal, abnormal and acquired characters; atavism; correlation in the development of parts; in-and-in breeding and cross-breeding; influences affecting fecundity. The selection and arrangement of the farm with reference to the system to be pursued. Rotation of crops; general advantages of a rotation; the best rotation for the distribution of labor, production of manure, and extermination of weeds. Planning farm buildings,—barns, piggeries and stables. Manure,—how best housed and applied; composting; commercial fertilizers. Agricultural experiments; field and feeding experiments. Stock-feeding and meat production; stall-feeding; soiling. In this, Miles’s Stock-Breeding is supplemented by a course of lectures.

Veterinary Science.—Short courses of lectures in general principles of veterinary science are provided for young men of the second and third years.

Books of Reference.—Journal of the Royal Agricultural Society of England, Morton’s Cyclopedea, Low’s Practical Agriculture and Domesticated Animals, Fleming’s Veterinary Obstetrics, Ribot on Heredity, Farmer’s Calendar, Allen’s American Farm-Book, The Complete Grazier, Stephens’s Book of the Farm, Thomas’s Farm Implements, Waring’s Draining for Profit and Health, the Reports of our own and other State Boards of Agriculture, and Shorthorn, Scotch Polled, Jersey and Berkshire Herd-Books.

Horticulture.—It is the aim to teach this art from a botanical basis. The student applies his knowledge of the prime facts in bo-

tanical physiology to the various operations of the nursery, orchard and farm. Barry's Fruit Garden is used, supplemented by a series of lectures upon the following topics, among others: The scope of Horticulture. General principles of propagation,—by buds, by seeds. Production of improved varieties,—by careful selection of seeds, by interfertilization of known kinds. Perpetuation of valuable sorts of fruits by bud propagation,—budding, grafting, layering, etc. The important points in nursery manipulation. The orchard; conditions of site, soil, exposure, elevation. Special treatment of different kinds of fruit trees. Pruning. Gathering and storing fruits. Small-fruit culture; list of varieties suitable for Kansas planting. Vegetable garden; selection and preservation of seeds; planting and transplanting. The management and use of hot-bed and cold-frame. Forest plantations. Wind-breaks. Hedges. Trees and shrubs for ornamental planting.

Books of Reference.—The horticultural works of Downing, Warder, Fuller, Thomas, Loudon, Henderson, and other standard authorities. The Horticultural Reports of the States of Kansas, Michigan, Illinois, Iowa, Missouri, Massachusetts and others. In Landscape Gardening, the works of Downing, Weidenmann and Kemp.

Botany.—During the College course two terms are given to the study of Botany.

Elementary Botany.—In the spring term of the first year, the organs of plants are first studied, after which the minute anatomy is briefly considered. This is followed by a study of vegetable physiology. The classification of plants and vegetable products and their uses are other important topics of the course. During the latter part of the term, a number of flowers are analyzed, and a few plants collected and prepared for the herbarium. Each student is required to provide himself with a pocket lens, under the direction of the Professor in charge. Text-book, Kellerman's Elements of Botany and Plant Analysis.

Advanced Botany.—In the winter term of the fourth year, the minute structure of plants, as well as vegetable physiology, is studied more fully. This includes an examination of the vegetable cell, its parts, modifications and products, and of tissue as presented in its various forms. This is made the basis for more detailed work on special subjects, among which may be mentioned germination, development of tissues, protoplasm, starch, parasitic fungi,—especially the moulds, smut, rusts, etc., and other cryptogamic plants. Each student has the use of a compound microscope, and works two hours daily in the botanical laboratory. While this course is intended primarily to furnish a foundation for applied botany in horticulture and agriculture, it also affords, to some extent, the advantages of systematic observation and original investigation. A good herbarium and a large greenhouse are drawn upon for material for study.

Books of Reference.—The works of Sachs, Gray, Lesquereux, Sullivant, Engleman, Tuckerman, Cooke, Berkeley, Darwin, Baxter, Bessey and others.

Chemistry.—*Inorganic Chemistry*, which occupies fourteen weeks of the second year, includes a consideration of chemical force and of the laws of chemical combination with nomenclature and formulas, and a careful study of the history, manufacture, physical, chemical and physiological properties, tests and uses, of the various elements and their compounds. Especial attention is given to those substances having extended application in the arts. In addition to the usual lecture-room experiments, the student repeats, as far as practicable, all this experimental work at his private work-table.

Organic Chemistry comprises a six-weeks course of lectures upon the preparation and properties of those organic substances most useful to man.

In *Chemical Analysis*, each student has his stand in the Qualitative Laboratory, completely furnished with apparatus and chemicals for his own use. His work includes the analysis of more or less complex mixtures of chemicals, minerals, ores, soils, mineral waters, well waters, etc. The time given to this work is two hours daily for eleven weeks.

Agricultural Chemistry.—This includes a thorough consideration of the application of chemical principles to the economy of the farm; the origin and formation of soils; the classification and composition of soils; the analysis of soils and their adaptation to purposes of production; the composition and use of manures; composting; chemistry of farm operations,—such as plowing, fallowing, draining; chemistry of plant growth. Text-book, *Elements of Agricultural Chemistry* by Johnston and Cameron.

Books of Reference.—Roscoe, Schorlemmer, Miller, Storer, Cooke, Strecker, Bloxam, Remsen, Frankland, Fresenius, Thorpe, Blyth, Prescott, Wanklyn, Tucker, Naquet, Paul & Payen, Wagner's Technology, Crookes's Metallurgy, Richardson & Watts's Technology, Muspratt's Chemistry, Watts's Dictionary, Sutton's Volumetric Analysis, Crookes's Select Methods, Journal of the Royal Agricultural Society, Reports of experiment stations, current journals.

Zoology.—In this study, Orton's Zoölogy has been adopted as a text-book. The intention of the course is to familiarize the student with the characters of some type in each class, and then, by comparative study, with the chief modifications of the type chosen. Especial attention is given to comparative anatomy and physiology. A good collection of animals, birds, reptiles, fishes, both mounted and alcoholic, a collection of invertebrates in alcohol, and a fine collection of conchological specimens, are among the means of illustration. Dissection and work with the microscope accompany the study.

Books of Reference.—A selection of standard works, including those of Agassiz, Huxley, Gegenbaur, Balfour, Foster, Darwin, Wallace, Packard, Coues, Baird, Jordan and others.

Entomology.—This science is studied with special reference to its economic relations with agriculture and horticulture. A brief course in the principles of classification is followed by a more extended study of the life-history of beneficial and injurious insects, and means of encouragement of one and the control of the other.

The instruction is presented in the form of lectures. Illustrations are furnished from the individual collections of the students, and from the entomological collection belonging to the College. Charts and drawings from nature are used to illustrate points of value in classification. The pocket lens used in botany is required in this study.

Books of Reference.—Packard's Guide to the Study of Insects, Harris's Insects Injurious to Vegetation, Riley's Reports, LeBaron's Reports, Fitch's Reports, Thomas's Reports, Reports of the U. S. Entomologist, Transactions of the American Entomological Society, Canadian Entomologist, Psyche and others.

Mineralogy.—For six weeks in the second year, two hours a day are given to mineralogy. This includes the study of crystallography, with the properties, forms and uses of the principal minerals of the United States. Blow-pipe analysis forms an important part of the course, each student being required to identify and name a large series of minerals. The pocket lens required in botany classes is used in this study. Text-book, Dana's Mineralogy and Lithology.

Books of Reference.—The works of Dana, Plattner and Elderhorst.

Geology.—This includes a general consideration of the earth's features, the constitution of rocks, and the arrangement of rock-masses; the causes or origin of events in geological history; the order of succession in the strata of the earth's crust, and of the organisms that existed and of the changes that were going on during the formation of each stratum. Prominence is given to facts having an economic bearing. The formation of soils and deposits of valuable minerals, especially in Kansas, are considered. Le Conte's Compend of Geology is used as a text-book.

Books of Reference.—The works of Dana, Le Conte, Geike, and the various geologic surveys.

Physics and Meteorology.—Two terms' work gives an opportunity for experimental study of the laws of sound, heat, light, electricity and magnetism; the constitution of the atmosphere; the measurement of temperature and humidity; atmospheric pressure. Text-books, Atkinson's Ganot's Physics and Loomis's Meteorology. This course also includes a careful study of instruments and methods employed in taking meteorological observations.

Books of Reference.—The works of Deschanel, Tyndall, Faraday, Helmholtz, Grove, Gordon, Thompson, Stewart, Siemens, Maxwell and Miller.

Anatomy and Physiology.—Human anatomy is made the basis of a thorough study in physiology and hygiene. This includes such subjects as: Digestion and food; poisons and antidotes; circulation of the blood; respiration and ventilation; secretion and excretion; the nervous system; and the special senses. The course embraces, to some extent, Comparative Anatomy and Physiology, affording preparation for the study of Stock-breeding and Zoölogy. Martin's Human Body is used as a text-book.

Books of Reference.—Dalton's Human Physiology, Carpenter's Human Physiology, Hunt's Physiology of Man, and Gray's Anatomy.

Special Hygiene.—To the ladies of the third year, a course of daily lectures is given upon the laws of life and health. The course extends over a period of ten weeks, and covers questions pertaining to personal health, and the health of the household,—such as food, air, exercise, clothing, temperature of rooms, and care of sick-room.

Books of Reference.—Health and its conditions (Hinton), Dictionary of Hygiene (Blyth and Tardien), Hygiene and Public Health (Buck).

Household Economy.—A series of lectures to the ladies of the second year continues through a term of twelve weeks. These cover the subjects of marketing, the chemistry of cooking, order, neatness and beauty in housekeeping, and comfort of a family. The class spends one hour each day in the kitchen laboratory, and cooking is done by each student.

Books of Reference.—The writings of Dr. Pavy, Miss Acton, Miss Dodds, Miss Parloa and Miss Youmans.

Arithmetic.—In the first year, one term is given to a general review of arithmetic. Practical measurements and the various applications of percentage receive special attention. Such forms of solution are required as lead to logical analyses. Two objects are aimed at in this course: First to give a practical knowledge of the computations used in ordinary business life; second, to secure the mental discipline so necessary to the study of higher mathematics. Text-book, Brooks's Union Arithmetic.

Book-Keeping and Commercial Law.—Beginning with a simple cash account, Book-Keeping is developed through all the principles of single and double entry. Considerable time is given to those forms best adapted to farm and business life. Each student provides a full set of blanks, and keeps a regular set of books, in which accuracy of calculation and posting, and neatness of execution, are regarded as essential as correct understanding of the principles.

In addition to this term's work in Book-Keeping, a practical course in Commercial Law is given, including contracts, sale of personal property, negotiable paper, interest, agency, partnership, bailment, common carriers of freight and passengers, the law of host and guest,

real estate, and the forms of business paper. Text-book, Nihart's Book-keeping and Commercial Law.

Books of Reference.—Townsend's Commercial Law, Mayhew, Duff and Bryant.

Algebra.—Two terms are devoted to the study of Algebra. In the first the student is thoroughly drilled in algebraic notation, the fundamental rules, the secondary operations of composition and factoring, and the simple form of the equation. The second term is devoted to the various transformations and applications of the equation,—simple, quadratic, radical, etc. The equation thus becomes a most important instrument for solving the problems of practical life in which quantity is an item; for demonstrating theorems in geometry and trigonometry; and for the construction of formulas for the use of the engineer and artisan. Text-book, Wentworth's Algebra.

Books of Reference.—Newcomb, Schuyler, Wells, Todhunter.

Geometry.—In geometrical drawing of the first year, the student has already become familiar with geometrical forms and their construction. The winter term of the second year is devoted to plane geometry. Half of the spring term is then given to solid and spherical geometry. Throughout the course, practical problems involving the principles demonstrated are given to the class. Text-book, Wentworth's Geometry.

Books of Reference.—Chauvenet, Warren and others.

Trigonometry and Surveying.—The principles of plane trigonometry, involved in mensuration and surveying, are first mastered. Surveying includes theory; adjustment and use of instruments; history and methods of U. S. Government surveys, areas of land; dividing land; retracing old lines; platting; topographical surveying; railroad surveying; leveling,—section and cross section; field practice with transit, compass, chain, level and rod. A map of the College farm, the data of which are gathered during the fall term, is drawn by each student during the winter term. Text-book, Ray's Trigonometry and Surveying.

Books of Reference.—Gillespie, Reports of U. S. Land Office.

Mechanics and Engineering.—A careful consideration of the laws of motion and force as exhibited in machines and various phenomena of nature occupies a single term. Another term is given to study of proper materials for buildings, their construction and durability; forms of roofs and bridges; care and use of machinery; and roads and road-making. Drafting is an essential feature of the work. Text-books, Peck's Mechanics, Mahan's Civil Engineering.

Books of Reference.—Rankine's Mechanics, Hand-books of Engineering, Knight's Mechanical Dictionary.

Drawing.—This study is required in four terms, of which two are in the first, one in the second, and one in the third year.

First term.—Daily lessons for fourteen weeks. Definitions of lines and geometrical figures; judging and measuring lines and angles; construction of perpendiculars to given lines, of triangles, four-sided figures and polygons, of the circle and its secant lines, of ellipses, ovoids, ovals, parabolas, hyperbolas, and various geometrical ornaments; use of drawing board, T-square and water colors; conventional representation of building materials. Prof. Morse's first two books on Mechanical Drawing are used as text-books. The College furnishes drawing board, T-square, triangle and water colors, but each student is required to have a drawing pen and a pair of compasses with attachments.

Second term.—Freehand Drawing three hours a week for twelve weeks. After the study of Nos. 3 and 4 of White's Text-books of Art Education, drawing from the object is taken up. The models used are geometrical solids, and objects of utility and beauty whose forms bear close relationship to geometrical types. The students are led to recognize the facts, relations and principles involved in the apparent form of the object, to note the distribution of light, shade, shadow and reflection on the same, and deduce the general principles which the observation and comparison of these appearances are found to establish. Lectures on color, principles of design, and history of ornamentation are occasionally given.

Third term.—Mechanical Drawing five weeks. Projection of the straight line and circle; intersection of geometrical solids; construction and development of helices. Principles of isometrical projection. Principles of shades and shadows. Books 3 and 4 of Morse's Mechanical Drawing are used as text-books.

Fourth term.—Mechanical Drawing twice a week for ten weeks. Principles of parallel, angular and oblique perspective. Intersections of curved and plain surfaces in perspective. Shaded perspectives. Books 5 and 6 of Morse's Mechanical Drawing are used as text-books.

During the winter term of the third year, each student is required to draw, color, ink and letter a large map delineating the surveys made during the fall term.

Students who show special aptitude are encouraged to take drawing as a fourth study during any part of the course, and given every opportunity to fit themselves for the drafting office or for special artschools. The instruction includes an extended course in freehand drawing, shading, coloring, architectural and mechanical drawing.

The graphic work of the different classes and special students is retained by the Department for exhibition during Commencement, after which it is returned.

Books of Reference.—Warren's Descriptive Geometry, Walter Smith's Manuals on Art Education, Woodward's National Architect, Guild's American Stair-Builder, Andre's Hand-Book of Topographical Drawing, Davies's Shades and Shadows, Gwilt's Cyclopedia of Architecture, Prang's Art Atlas, Lübke's History of Art, Steinhauser's Room Decoration, Van Bezoldt's Theory of Color.

English Language and Literature.—*First Year.*—The study of English Grammar is made to serve directly in securing clear perception and correct expression. Such practice in analysis and parsing as may give the student a clear idea of the English sentence in all its parts is associated with frequent exercises in expression and criticism. Under English Structure is included a careful study of words and their elements,—roots, stems, prefixes and suffixes. The most fruitful roots from the Saxon, Latin and Greek are learned, and also the laws governing the changes in the letters of roots in forming derivatives. Lectures are given upon the origin and history of the English Language. At the same time, the daily exercises are made a means of training in spelling, pronunciation and definition. Text-books, Reed & Kellogg's Higher English Lessons, Swinton's Word Analysis.

Principles and methods in English Composition are then taken up, with Kellogg's Rhetoric for a text-book. Numerous exercises and revisions familiarize the student with the essentials of neat, legible manuscript, and clear, forcible expression.

Each class meets weekly for drill in elocution and composition.

Third Year.—One term is given to the study of Higher Rhetoric, embracing the principles of clear explanation and convincing argument, as well as the outlines of sound criticism, as presented in A. S. Hill's Rhetoric. This is followed by a term spent in the History of the English language and literature, with abundant illustrations from the best authors.

Students are led in this way to appreciate the power of our mother-tongue, and at the same time to gain a slight acquaintance with the best thoughts of the world. Students are encouraged and directed in the use of the College Library, and are under constant oversight in the expression of their thoughts in writing. Original declamations, carefully prepared and delivered before the students and Faculty, make a part of the drill in the higher classes.

In the course for young women, the first term of the fourth year gives training in the elements of criticism and good taste by a critical study of famous works in English and American Literature.

Books of Reference.—Goold Brown's Grammar of English Grammars, Marsh's Lectures on the English Language, Whitney's Life and Growth of Language, DeVere's Studies in English; Allibone's Dictionary of Authors, Hallam's Literature of Europe, W. D.

Adams's Dictionary of English Literature, C. K. Adams's Manual of Historical Literature, Whately's Rhetoric, Fowler's English Grammar, Trench on the Study of Words, Chambers's Cyclopedia of English Literature, Phillip's English Literature, Tyler's American Literature.

History and Political Economy.—In the first year the study of United States History occupies one term, and special attention is given to the form and growth of the government under which we live.

In the third year a term is given to General History, with Swinton's Outlines as a text-book. The world's progress in science, literature and art is carefully traced, with its causes.

In the fourth year, a careful study of the Constitution of the United States, with Cooley's Principles of Constitutional Law as a text-book, shows the general principles of government, its means and methods, illustrated by historical references.

The study of Political Economy, in a full term of the fourth year, gives a fair presentation of subjects connected with production, distribution and consumption of wealth. Chapin's Wayland's Elements is the book of daily reference, while the instruction is given by lectures. Pains is taken to compare conflicting views, and point out sources of information on all sides of vexed questions, without bias or prejudice.

Books of Reference.—Guizot's Civilization, Bancroft's United States, Hume's, Macaulay's and Green's England, Guizot's France, and a good library in general history. In Political Economy, works of Adam Smith, Mill, Fawcett, Cairnes, Walker, Bowen, Carey and Thompson.

Logic and Philosophy.—The art of reasoning correctly is aided by a study of systematic logic, both deductive and inductive. Special prominence is given to methods for exact observation and experiment, and correct principles for classification. The previous researches and experience of the student are made to illustrate these principles. Text-book, Jevons's Lessons in Logic.

A short course in Psychology gives the general principles of intellectual and moral philosophy. Perception, understanding, reason, feeling and volition are topics of explanation and analysis. Theories of right and wrong, and correct principles of action, are made the means of a clear understanding of individual rights and duties. Hopkins's Outline Study of Man forms the basis of the course.

Books of Reference.—Mill's, Jevons's and Fowler's Logic, Bascom's Psychology, Porter's Human Intellect, Fairchild's Moral Philosophy, Cousin's "The True, The Beautiful and The Good," and the works of Spencer, Hamilton and others.

Industrial Arts.—The training in these departments is designed to be systematic and complete in each, so that the student, following a single line diligently through the four-years course, gains the essentials of a trade and a reasonable degree of skill. Those who wish only a general acquaintance with the arts can take shorter courses in several of them; but all are to select with a definite purpose. In the established course, young men are required to take the regular term in the carpenter shop and on the farm and gardens, whatever the industrial chosen; young women are required to give one term to sewing, one to practice in the kitchen laboratory, and one in the dairy.

Agriculture and Horticulture are required of young men as industrials during one term of the second year and one term of the third year. In these, practice is made to illustrate and emphasize the teaching, and cover essentially the same ground.

Cooking.—During the winter term, the young ladies who have lectures on Household Economy are required to cook one hour per day. They are taught various methods of making the substantial articles of food, as well as allowed to spend some time on the dainty dishes. During the term, they have practice in waiting on the table, in serving guests, and in arranging for evening companies; putting into immediate practice the lectures of each day.

Dairying.—During the spring term, daily instruction and practice in the different branches of dairying is given the ladies of the second year by the Instructor in Household Economy. Here the regular daily work is supplemented by a short course of lectures intended to explain the best practice in the arts of butter and cheese-making, and to give the reasons therefor. The following topics cover, in the main, the instruction given the class: Influences affecting the quality and quantity of milk; butter-making; the household and factory systems of cheese-making; creameries; “deep” and “shallow” settingsystems; packing and preserving butter.

Work in Wood and Iron.—All students enrolled in classes for wood-work will be given lessons in sawing and planing to test their skill, and advanced as fast as their work will warrant. Students who desire to learn the trade of carpentry will be given work in the direct line of that trade as far as possible. Work on roofing, framing, bridge work and stair-building will be done by models. Careful instructions will be given in sharpening, fitting up, and taking general care of all tools required in the work. Carpentry is required of young men during one term of the first year with especial reference to facility in use of common tools.

In iron work, instruction is given in ordinary work,—forging, filing, tempering, etc.

Sewing.—Young ladies are taught in all ordinary forms of sewing with needle and machine, and in cutting, fitting and trimming dresses

and other garments. A straight-line system of cutting and fitting is taught, and systems are furnished to the students at wholesale rates. They may furnish materials, and work for their own advantage during the hour of practice, under the direction of the Superintendent. One term of sewing is required before the completion of the first year.

Printing.—Two courses are pursued in this art. In one the student is taught the implements or tools used in typography, and how to use them; composition; imposition; correcting proof; technical terms; presses and their workings; and the general duties of a first-class workman. Every one is encouraged in the study of the rise and progress of printing and related arts. Habits of accuracy and thoroughness are required, in order to advancement. The second course of lessons, alternating with those in the first, embraces instruction in spelling, capitalization, syllabication, punctuation, proof-reading, preparation and criticism of essays, and such other work as will make the student accurate and expert in language. Wilson's Punctuation is the text-book; but much of the instruction is oral,—such as grows out of the every-day experience of the office.

Admirable drill is furnished by the *Industrialist* to all, but especially to those who take the full course. The printing which the departments of the College require gives to the advanced student a fair knowledge of the principles and practice of job work.

Books of Reference.—MacKellar's American Printer, Harpel's Typograph, Rounds's *Printers' Cabinet*, Ringwalt's Encyclopedia of Printing, DeVinne's The Invention of Printing, DeVinne's Printers' Price List, and standard works on grammar and rhetoric.

Telegraphy.—The course of training involves for beginners the characters that compose the alphabet, and combinations of these characters into words and sentences,—attention being paid to spelling and to short and precise expression in messages,—abbreviations, signals, forms of messages, train orders, reports, etc. To the more advanced is given regular line business,—as press reports, messages, cypher messages, and orders in all forms used by prominent telegraph companies, together with the necessary book-keeping, upon exact copies of blanks in actual use, thus giving the student an understanding of the work of an operator. A portion of the line is devoted to instruction in the use and management of lines, batteries, instruments, etc. The elementary principles, of electricity, magnetism and electro-magnetism involved in telegraphy are taught and illustrated by experiments. The more recent inventions relating to the art are discussed and explained. Pope's Hand-Book of the Telegraph is used as a text-book.

Books of Reference.—Prescott's Electric Telegraph, Morse's Telegraphic Apparatus, Culley's Telegraphy, and the works of DuMoncel, Clark & Sabine, Davis & Rae, Mandet, Jenkins, Harris, with the *Journal of the Telegraph* and the *Electrical Review*.

Instrumental Music.—Provision is made for the teaching of music upon instruments of all sorts. A full course upon the organ or piano extends over four years, including harmony and composition; but the students may take lessons for a single term if they choose. The College furnishes the instruments for daily practice, but the instruction is paid for at the usual rate, as given under "Expenses." Music may be the industrial for young women, unless some other is required in the course. Young men may take music in addition to their course, if able to keep up standing in classes.

Vocal Music.—All students are furnished instruction in vocal music free of charge, under the direction of the Faculty. Classes meet on Mondays and Wednesdays for advanced pupils and for beginners on Tuesdays and Thursdays at 1:30 p. m. The advanced class shares in the music of public exercises during Commencement week. This study is taken up at the choice of the student, but regular attendance is required as at other classes until excuse is granted.

Military Training.—During the second year, a course of twenty-six lessons is given. Fourteen of these are designed to show what an army is for, its relation to the country, and, in a general way, to describe its organization and duties. The remaining twelve are devoted to the consideration of Todd's "Campaigns of the Rebellion."

To those who desire it, an opportunity is given for practice in the ordinary infantry drills, including bayonet and sword exercise and target practice. Although drill is thus made optional, students are not allowed to take it for periods shorter than one term. To obtain a proper proficiency, however, one should take the tri-weekly drill for at least a year.

The College battalion is divided into companies, which are officered by students appointed each term by the Professor in charge with the approval of the President.

Arms and accoutrements are furnished by the Government, the students being required to keep such as they use in proper condition. Uniforms for use in drill are furnished by the College.

MEANS OF ILLUSTRATION.

AGRICULTURE.—Two farms of 215 and 100 acres, for the most part surrounded by durable stone walls, subdivided into fields of variable size to suit the system of management.

A large variety of standard experimental grains in cultivation in fields and experimental plats.

A barn 50 by 75 feet, expressly arranged for experimental uses; and connected with it a general purpose barn, 48 by 96 feet, for grain, hay,

horses and cattle. Both buildings are provided with steam power and equipped with improved machinery for shelling, grinding, threshing and steaming.

A pigery of six pens, with separate yards.

An implement house (22 by 50 feet), of two stories.

Shorthorn, Aberdeen-Angus, Galloway and Jersey cattle; Berkshire, Poland-China and Essex swine.

Farm implements of improved patterns.

Collections of grains, grasses and forage plants.

Buildings, stock and equipments are valued at \$20,000.

HORTICULTURE AND ENTOMOLOGY.—Orchards, containing 275 varieties of apples, 80 of peaches, 50 of pears, 16 of plums, 20 of cherries and 10 of apricots.

Small-fruit garden with 200 varieties of small fruits, including blackberries, raspberries, gooseberries, currants and strawberries; and vineyard with 100 varieties of grapes.

Forest plantation of twelve acres, containing twenty varieties of from ten to fifteen years' growth.

Ornamental grounds, set with a variety of evergreen and deciduous trees. Sample rows, containing about 150 varieties of ornamental and useful shrubs and trees, labeled.

Vegetable garden, with hot-beds and cold-frames and experimental beds. Practice rows for students' budding, grafting, cultivating and pruning.

A well-planned and furnished greenhouse of three rooms, stocked with a collection of native and exotic plants.

Museum, containing a collection of woods from American forests, and a large series of specimens in economic and general entomology.

Value, exclusive of orchards and grounds, \$8,000.

CHEMISTRY AND MINERALOGY.—Eight rooms fitted with tables and apparatus for a class of eighty students in qualitative analysis, sixteen in quantitative analysis, including necessary facilities for assaying, with a fine mineralogical collection and general illustrative apparatus. Value, exclusive of building, \$6,000.

NATURAL HISTORY.—A fine museum building, with class room, laboratory and offices attached, will be ready for use in September, 1886. Extensive collections in botany, zoölogy and geology; apparatus and illustrative preparations in physiology; and 17 compound microscopes for use of students. Value of collections, etc., \$5,000.

DRAWING.—Models, plaster-casts, patterns, charts, easels and implements, valued at \$900.

PHYSICS AND ENGINEERING.—Physical apparatus, meteorological instruments, compasses, transits, levels, chains, models, etc., valued at \$1,700.

KITCHEN LABORATORY, with ranges, cooking utensils, dining-room furnishings, creamery and dairy furniture, valued at \$400.

CARPENTRY AND BLACKSMITHING.—Carpenter shop with separate benches and tools for thirty students in each class, besides lathes, mortising machines, and general chest of tools for fine work. Power furnished by a ten-horse-power Atlas engine.

Shop for iron work, with forges, vises, drills, etc.

Inventory of material and apparatus in both shops, \$3,500

PRINTING.—Office, with twenty-five pairs of cases, large fonts of nonpareil, brevier, long primer and small pica type, a good assortment of job type, a Country Babcock press, a Gordon jobber, and a paper cutter. Value of equipment, \$3,000.

TELEGRAPH OFFICE.—With five miles of line, connecting thirty branch offices, and as many instruments, and a Remington type-writer. Inventory, \$900.

SEWING ROOMS, with six machines, models, patterns and cases, worth \$450.

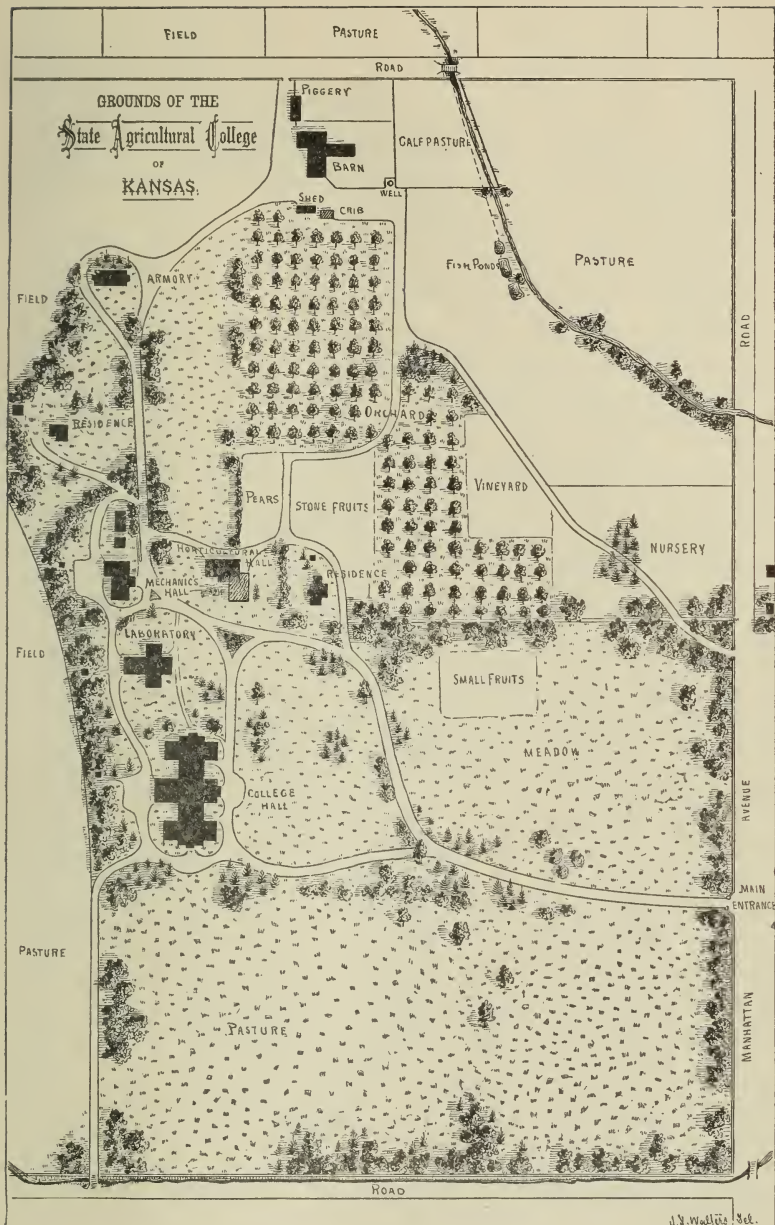
MUSIC ROOMS, with four pianos, four organs, and other instruments; valued at \$1,100.

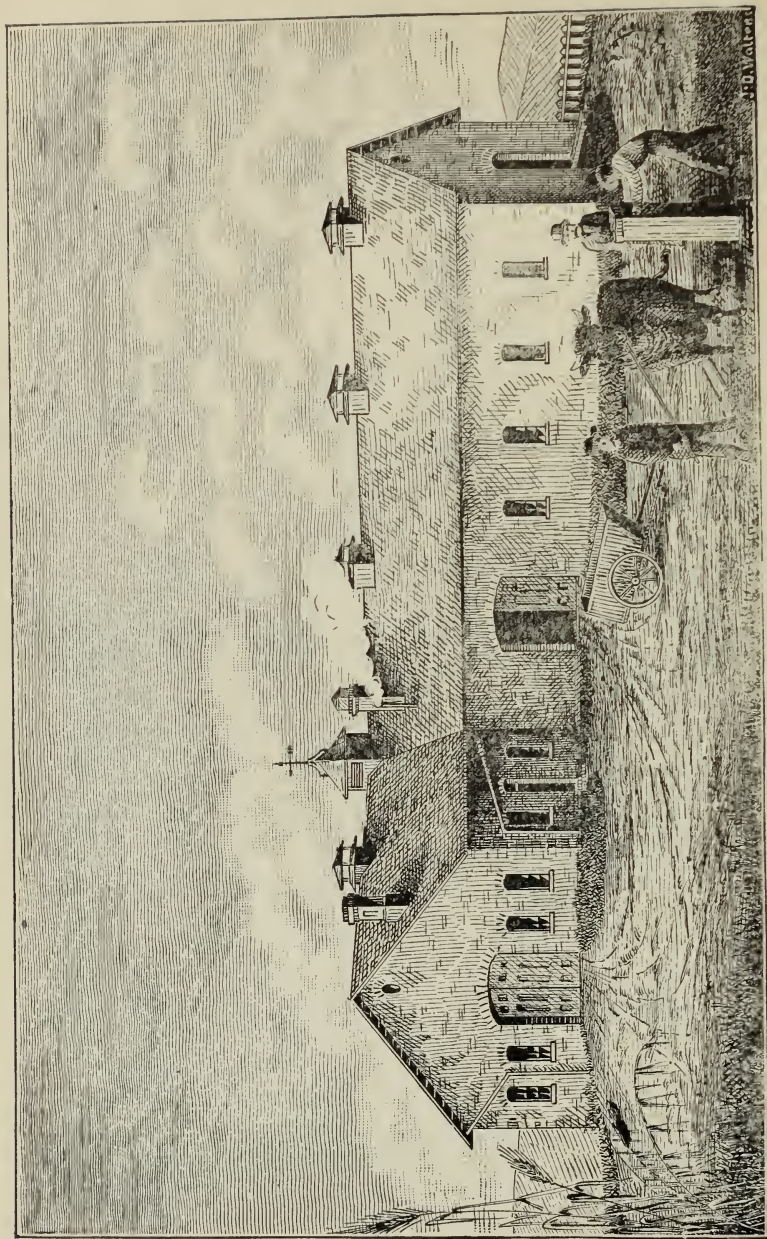
A LIBRARY, carefully selected and catalogued, containing 6,000 volumes. A reading-room is maintained in connection with the library, where may be found on file forty-five of the leading literary, scientific, technical and agricultural periodicals, and several hundred newspapers, including the principal daily and county papers from all parts of the State. Value of library, \$9,500.

ARMORY, containing one hundred stands of arms (breech-loading cadet rifles, calibre .45) with accoutrements; also swords, uniforms, etc. Value, exclusive of arms, \$600.

GROUND AND BUILDINGS.

The College grounds and buildings, occupying an elevation at the western limit of the city of Manhattan and facing towards the city, are beautiful in location. The grounds include an irregular plot in the midst of a fine farm, with orchard, vineyards and sample gardens attached. The grounds are tastefully laid out and extensively planted according to the design of a professional landscape gardener, while well graveled drives and good walks lead to the various buildings. All of these are of the famed Manhattan limestone, of simple, but neat style of architecture, and admirably suited to their use. All recitation rooms are excellently lighted and ventilated, and all





EXPERIMENTAL BARN OF THE STATE AGRICULTURAL COLLEGE.

are heated by steam or hot water. The buildings stand as indicated in the plot accompanying the following description:—

College, 130 by 250 feet in extreme dimensions, arranged in three distinct structures, with connecting corridors. This building contains in its two stories and basement, offices, reception room, cloak rooms, studies, chapel, library, reading-room, model kitchen and dairy, sewing-room, society rooms and ten class rooms.

Chemical Laboratory, one story, 26½ by 99 and 46 by 75 feet of floor space, in form of a cross. It contains eight rooms, occupied by the Department of Chemistry and Mineralogy.

Mechanics' Hall, 39 by 103 feet, of two stories, occupied by carpenter shop, Telegraph and Printing offices, and Music rooms.

Horticultural Hall, 32 by 80 feet, one story and cellar, having cabinet room, class room, work room and storage, with greenhouse attached.

Two stone dwellings, occupied by the President and the Professor of Agriculture.

Armory Hall, 46 by 96 feet, and two stories. This building, which has served many purposes, is now to be fitted for armory and drill room below, and for class room, laboratory and museum of the department of Natural History. It will be occupied for the latter purpose at the opening of the Fall Term, 1886.

The Barn is a double but connected stone structure, 50 by 75 feet in its greatest easterly and westerly extension, and having an annex 48 by 96 feet at right angles with this. A basement, having stables for seventy-five head of cattle, silo, engine room and granaries, underlies the entire structure.

The blacksmith shop, lumber house, implement house, piggery and various out buildings, are of wood.

GENERAL DUTIES AND PRIVILEGES.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character by both precept and example, and expected "upon honor" to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week-day except Saturdays, and no student may be absent without excuse. Students enrolled in any term cannot honorably leave College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance, scholarship and deportment shows to each student his standing in the College. After each monthly examina-

tion, during the first year of attendance, a report of advancement is made to parents; and any student, upon leaving College at the close of a term, may receive a certificate of standing.

Chapel exercises occupy fifteen minutes before the meeting of classes each morning, and unnecessary absence from them is noted in the grades.

Every Friday, at 1:30 p. m., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the third and fourth-year classes. On each Wednesday, at the fifth hour, all the classes meet for exercises in elocution and correct expression.

There are three prosperous literary societies, two of them of many years standing. All meet weekly, in rooms set apart for their use. The *Alpha Beta* is open to both sexes, and holds its meetings Friday afternoons. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the first Friday evening of each month.

Every Friday evening a students' prayer-meeting is held in a College Society Room, led by a member of the Faculty. On the Sabbath students are expected to attend services at least once in the different churches of the city.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College.

Occasionally during each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises and friendly greeting find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.

The Manhattan Horticultural Society meets monthly, and other farmers' associations occasionally, at the College, and the students have the privilege of attending these meetings.

EXPENSES.

Tuition is free, and no general fee for incidental or contingent expenses is charged. In a few special departments of instruction, the following payments are made in advance to the Secretary:—

In the term of analytical chemistry, students pay \$3 for the chemicals and apparatus used in their laboratory practice and analysis.

In the printing office, young men, in their first year, pay \$3 a term for office expenses. Advanced students have the use of the office for the work performed during the industrial hours.

In telegraphy, young men pay \$3 a term for office expenses.

Young women are furnished both printing and telegraphy free of expense, these two offices, with the Sewing and Cooking Departments, being provided especially for their industrial training.

Lessons in instrumental music, two a week, are from \$10 to \$14 per term, according to its length; one a week, \$6 to \$8.40. One half is to be paid to the instructor in charge with the first lesson, the other half at the middle of the term.

The cost of text-books at the book-store is, for the first year, about \$4 a term; for the second year, \$2.75; for the third year, \$7.50; and for the fourth year, \$5.50.

Board and washing are not furnished by the College. Board, with furnished room, can be procured in private families at from \$2.75 to \$4 per week. Some students board themselves at even less cost, and rooms for the purpose can be obtained at a rent of from \$1 to \$2.50 a month. Washing costs from \$0.50 to \$1 a dozen pieces.

Ordinary expenditures, aside from clothing and traveling expenses, range from \$100 to \$200 a year.

LABOR AND EARNINGS.

Every encouragement is given to habits of daily manual labor during the College course. Only the one hour of daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their ability and means.

All labor at the College is under the direction of the Superintendents of the departments, and offers opportunity for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are open afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed—outside of required hours of labor—upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates, varying with services rendered, from eight to ten cents an hour. The Superintendents strive to adjust their work to the

necessities of students, and give them the preference in all tasks suitable for their employment. So far as practicable the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay-roll for the past year ranges from \$281 to \$393.

Many students obtain work in the city or upon neighboring farms, and so pay a part of their expenses. Students in the shops are allowed to work somewhat for their own profit, in the manufacture of articles for sale and use. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term-time, or from other sources, for the larger part of their expenses. The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

TERMS OF ADMISSION.

Applicants for admission at the beginning of the year, in September, must be at least fourteen years of age, and able to pass a satisfactory examination in reading, spelling, writing, arithmetic including percentage and interest, geography, and elements of English grammar. Those applying later in the term must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of the term, in order to advance with the class from the first.

Applicants of mature age who, for lack of advantages, are unable to pass the full examination may be received on special conditions.

Applicants for advanced standing in the course must pass examination in all the previous studies of the class to be entered; but, if they have pursued such studies in other institutions of similar rank, they may receive credit for their standing in those institutions upon presenting a certificate from the proper officer, showing that their course has been equivalent to that given here.

The following questions may serve as samples of the usual examinations for admission:—

ARITHMETIC.

1. Define a number; a multiple; percentage.
2. A man bought 60 cows at \$75 each. He sold 25 of them at \$85 each. How must he sell the remainder to gain \$687½ on all?

3. Find the Greatest Common Divisor of 336, 384 and 432.
4. Find the sum of $8\frac{1}{2}$, $7\frac{2}{3}$, $6\frac{3}{4}$, $9\frac{5}{8}$.
5. Reduce £7 6s. 8d. to farthings, and explain the process.
6. Reduce 3lb. to the decimal part of a ton.
7. Sold a cow for \$37.50 and gained 20 per cent on the cost; what was the cost?
8. How many apple trees set in squares 30 feet apart can be planted in a field 40 rods square, the outer rows to be on the line of the field.
9. How much will it cost to carpet a floor 30x28 feet. with carpet 24 inches wide, at \$1.25 a yard?
10. Loaned \$1,200 August 1st, 1883; what was due September 10th, 1884, at 7 per cent per annum?

GRAMMAR.

1. Define parts of speech.
2. Define the modifications, or properties, of nouns.
3. Write a sentence containing one noun in the nominative case, one in the possessive, and one in the objective.
4. Write a sentence containing an irregular transitive verb.
5. Give a synopsis in the first person singular of some regular verb.
6. Illustrate two ways of comparing adjectives.
7. Write two derivatives each from *fine*, *dry*, *trot*.
- 8-10. Write at least ten lines describing your journey to Manhattan, or some other journey.

 BUSINESS.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

College Lands and all business connected with their sale are in charge of the Land Agent.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer, in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. Applications for extension of time on land contracts should be sent to the Secretary of the Board of Regents, at Manhattan.

The *Industrialist* may be addressed through Prof. E. M. Shelton, Managing Editor. Subscriptions are received by Supt. George F. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Kellerman, chairman of committee on Museums.

Questions, scientific or practical, concerning the different departments of study or work, may be addressed to the several Professors and Superintendents.

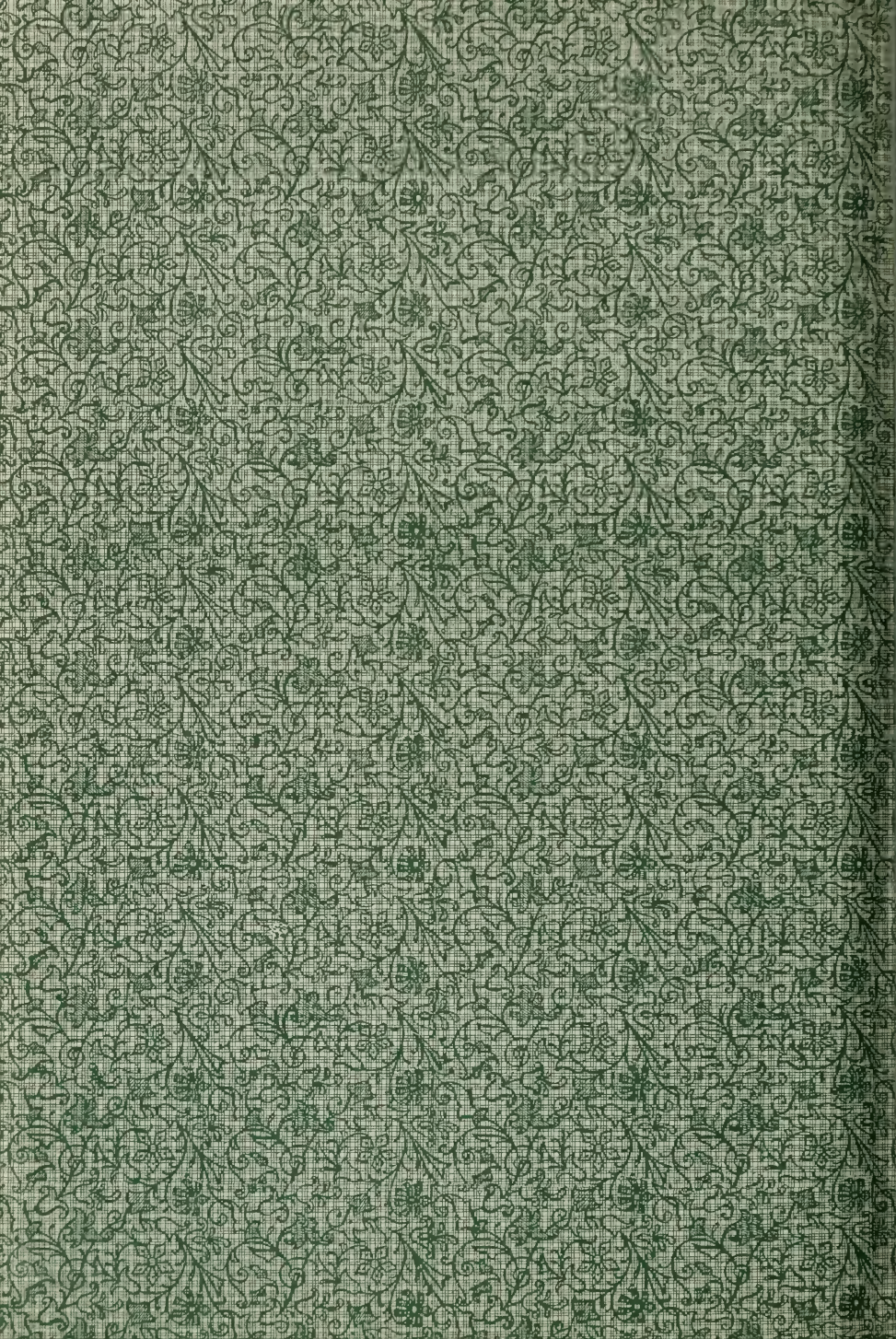
General information concerning the College and its work—studies, examinations, grades, boarding places, etc.,—may be obtained at the office of the President.

Applications for Farmers' Institutes should be addressed, as early in the season as possible, to the President.

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